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Fishery Data from the Anderson River Estuary, Northwest Territories, 1989

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by

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ABSTRACT

Bond, W.A., and R.N. Erickson. 1991. Fishery data from the Anderson River estuary, Northwest Territories, 1989. Can. Data Rep. Fish. Aquat. Sci. 849: vi + 59 p.

The fish community within the estuary of the Anderson River, Northwest Territories, was monitored from 27 June to 5 September 1989 by means of two shore-based trap nets. Five coregonid species accounted for 71.8% of the total catch. These included Coregonus sardinella (least cisco), C. nasus (broad whitefish), C. autumnalis (Arctic cisco), C. clupeaformis (lake whitefish), and Stenodus leucichthys (inconnu), which represented 59.5, 23.0, 8.7, 7.9, and 0.9%, respectively, of all coregonids captured. This report summarizes catch data and length-frequency information for each of the 23 species captured. For the coregonid species, data on age and growth features, sex ratios, and state of maturity are also included. Additionally, data are presented on water temperatures, salinity, and water levels encountered in the estuary during the summer.

Key words: Beaufort Sea; anadromous species; life history; migrations; Arctic cisco; Coregonus autumnalis; least cisco; Coregonus sardinella; broad whitefish; Coregonus nasus; lake whitefish; Coregonus clupeaformis; inconnu; Stenodus leucichthys; marine fish.

RESUME

Bond, W.A., and R.N. Erickson. 1991. Fishery data from the Anderson River estuary, Northwest Territories, 1989. Can. Data Rep. Fish. Aquat. Sci. 849: vi + 59 p.

La communauté de poissons de l'estuaire de la rivière Anderson, Territoires du Nord-Ouest, a fait l'objet d'une étude du 27 juin au 5 septembre 1989 à l'aide de deux filets-trappes situés près de la rive. Cinq espèces de corégonidés ont constitué 71,8 p. 100 des prises totales, à savoir Coregonus sardinella (cisco sardinelle), C. nasus (corégone tschir), C. autumnalis (cisco arctique), C. clupeaformis (grand corégone) et Stenodus leucichthys (inconnu) qui ont représenté respectivement 59,5, 23,0, 8,7, 7,9 et 0,9 p. 100 de tous les corégonidés capturés. Le rapport contient un résumé des données sur les prises et de l'information sur la fréquence de longueurs pour chacune des 23 espèces capturées. Dans le cas des espèces de corégonidés, le rapport contient également des données sur l'âge et les caractères de croissance, sur les sex-ratios et sur le stade de maturité. On trouvera de plus des données sur la température, la salinité et le niveau de l'eau dans l'estuaire au cours de l'été.

Mots clés: Mer de Beaufort; espèces anadromes; cycle vital; migrations; cisco arctique; Coregonus autumnalis; cisco sardinelle; Coregonus sardinella; corégone tschir; Coregonus nasus; grand corégone; Coregonus clupeaformis; inconnu; Stenodus leucichthys; espèces marines.

INTRODUCTION

This report summarizes the results of a trap netting study conducted in the estuary of the Anderson River (Wood Bay), Northwest Territories, during summer 1989. The study was undertaken in search of answers to questions concerning the life history of Arctic cisco (Coregonus autumnalis), an anadromous coregonid that is common along the Beaufort Sea coast during the summer months. To date, most information relevant to the life history of Arctic cisco has come from fisheries studies in the Mackenzie River or along the Yukon/Alaska coast (Stein et al. 1973; Craig and Mann 1974; Kendel et al. 1975; Moulton et al. 1985; Cannon et al. 1987; Bond and Erickson 1987, 1989; and others). Thus, the most complete information on the migrations and other life history features of this species is from areas west of the Mackenzie.

Arctic cisco are also known to migrate eastward from the Mackenzie River along the coast of the Tuktoyaktuk Peninsula (Jones and den Beste 1977; Bond 1982; Lawrence et al. 1984; LGL 1989). However, the extent and periodicity of these eastward migrations are not well understood. Arctic cisco are known to occur within Liverpool Bay (Bray 1975; Gillman and Kristofferson 1984), but the relationship of these fish to Mackenzie stocks has not been verified. The general lack of information on the distribution and abundance of Arctic cisco to the east of the Mackenzie, and particularly on the significance of the Liverpool Bay area to Mackenzie River stocks, represents a major gap in our understanding of this important species.

The general objectives of the current study are to: 1) determine whether major rearing/overwintering of juvenile Arctic cisco from the Mackenzie River occurs east of the Mackenzie Delta; 2) identify specific areas to the east of the Mackenzie Delta that may be critical to the maintenance of Mackenzie River stocks; and 3) quantify the significance of such eastern locations to Mackenzie River populations. The specific objective for 1989, the first year of the study, was to monitor and describe the coastal migrations of Arctic cisco in Wood Bay near the mouth of the Anderson River.

Although the initial focus was on Arctic cisco, this study has placed equal emphasis on several other coregonid species encountered in Wood Bay. These include least cisco (C. sardinella), broad whitefish (C. nasus), lake whitefish (C. clupeaformis), and inconnu (Stenodus leucichthys). Other species have been dealt with in less detail.

STUDY AREA

Wood Bay (69°45'N, 129°00'W) is located 175 km east of Tuktoyaktuk, Northwest Territories, and is part of the Liverpool Bay system (Fig. 1). Recognized as a rich fishing area, it was once the site of a Roman Catholic mission which operated at Stanton (Fig. 2) from 1937 to 1954 (Abrahamson 1968). The bay has a total surface area of approximately 350 km^2, of which 80% lies within the 5 m isobath. Although influenced by the Mackenzie River, Wood Bay receives most of its fresh water from the Anderson River (Fig. 2), which drains an area of 60 000 km^2 and delivers a total annual discharge of 2 x 10^6 to 8 x 10^6 dam^3 to the southern end of the bay. The smaller Mason River enters Wood Bay at its north end (Fig. 2). Ice-out on the Anderson River occurs in May, contributing to the clearing of ice from the inner part of Wood Bay by mid-June. Ice may persist in the northern half of Wood Bay until late June, and in Liverpool Bay until mid-July. As river flows diminish following the spring flood, saline water encroaches into Wood Bay from the north, although temperature and salinity patterns in the bay are strongly influenced throughout the summer by winds and by rain events in the Anderson River watershed. Because it is so shallow, most of Wood Bay undoubtedly freezes to the bottom in winter. However, because the Anderson River flows throughout the winter, pockets of fresh water probably persist beneath the ice, a feature of considerable significance to anadromous fish in a region where winter habitat is severely restricted (Craig 1989).

MATERIALS AND METHODS

FIELD METHODS

Physical and chemical

Environmental parameters measured during this study included water temperature, salinity, and water level. Water temperature and salinity were determined at each trap check. Water temperatures were measured (±0.5 C) using a hand-held pocket thermometer. Water samples for salinity analysis were transported in 1 L Nalgene bottles directly to the field laboratory where salinity was determined using a Model 33 YSI meter. Continuous water level readings were obtained from an Ottoboro tide gauge established near Station 501 (Fig. 2). Tapes from the tide gauge were analyzed by staff of the Tides and Current Section, Institute of Ocean Sciences, Department of Fisheries and Oceans, Sidney, BC. Air temperatures for the study period (Nicholson Point data) were obtained from the Edmonton office of the Department of the Environment, Atmospheric Environment Service.

Trap net sampling

The sampling gear consisted of a double codend trap with a single lead extending perpendicularly to the shoreline and two 15.2 m wings set at 45° angles to the lead. Complete specifications for the traps, wings, and leads are given in Bond and Erickson (1989). Identical gear has been utilized in numerous recent studies on the Beaufort Sea coast (Moulton et al. 1985; Cannon et al. 1987; Bond and Erickson 1989; LGL 1989).

Two stations were established on the east coast of Wood Bay (Fig. 2). Station 501, installed 27 June, incorporated a 45.6 m lead while that at Station 502, installed 14 July, was 30.4 m long. Once established, both traps operated continuously until 5 September. Traps were usually checked twice daily. On each occasion trapped fish were removed from the codend to a floating holding pen for processing and the trap was reset immediately. Total fishing effort was approximately 70 net-days at Station 501 and 54 net-days at Station 502 (Table 1).

All trapped fish were identified to species and counted. Non-coregonid species were measured (fork length (FL) or total length (TL) ±1.0 mm) to a maximum of 30 fish per day at each location and released. For the coregonid species, a more rigorous sampling effort was involved. A maximum of 30 individuals per codend per day were measured (FL±1.0 mm) for broad whitefish, lake whitefish, and inconnu. In the case of least cisco and Arctic cisco, a maximum of 50 small individuals (i.e., <150 mm FL) and 30 large fish (≥150 mm) were measured per codend per day. For the ciscoes, ratios from these subsamples were applied to total counts of large and small fish and the results combined to produce length-frequency descriptions of the total catch. Small numbers of each coregonid species were sacrificed for subsequent biological analysis. Numbered Floy anchor tags (Type FD-68B) were applied to some large Arctic cisco and broad whitefish in hopes of obtaining information on the geographical extent of movement of individual fish.

LABORATORY METHODS AND DATA ANALYSIS

Eleven of the fish species captured were considered sufficiently important to warrant some level of analytical attention. These included the five coregonid species, Arctic flounder, rainbow smelt, Pacific herring, fourhorn sculpin, longnose sucker, and saffron cod.

Catch-per-unit-effort

Using the daily catch data, the catch-per-unit-effort (CPUE) for each species was calculated as the number of fish captured per day (24 h) in each codend trap. Separate CPUE determinations were made for large and small least and Arctic cisco. Station CPUE's, the sums of the CPUE values for the individual codends, were pooled by weekly cycles for graphing to eliminate short-term fluctuations and emphasize seasonal trends. The difference in lead length between stations was disregarded in these calculations. Inclusive dates for the sampling cycles referred to in the text are presented in Table 1.

Length-frequency distribution

The length-frequency distribution for each key species was determined by weekly sampling period for each codend trap at each station. For purposes of this report, length-frequencies for the non-coregonid species are presented for the total sample and by sampling station. For the coregonids, length-frequency distributions are presented as well by two-week intervals in order to demonstrate temporal changes.

Biological analysis

Samples of each coregonid species were retained for more complete biological evaluation. These samples were not selected randomly from the catch, but rather were chosen to ensure representation across the full size ranges of fish occurring in the trap net catches. For these fish, fork length (±1.0 mm) was recorded and body weight (±1.0 g) was determined using an electronic balance. Sex was determined by examination of the gonads and a qualitative description of the degree of gonadal development was applied according to the following scale:

Female	Male	
1	6	Immature
2	7	Maturing
3	8	Mature
4	9	Ripe
5	10	Spent
	0	Sex Indistinguishable

To provide a more quantitative assessment of the degree of sexual development, gonads were removed from the fish and weighed fresh (±1.0 g). The data on body and gonad weight were then used to calculate the gonadosomatic index (GSI) by the formula: $GSI = (\text{gonad weight} \times 100) \cdot \text{fish round weight}^{-1}$.

Scales and sagittal otoliths were retained for age determination. Scales were employed

primarily to age young specimens (<6 years) and to assist in the interpretation of otoliths. Otolith ages were determined by the break and burn method (Barber and McFarlane 1987).

Weight-length relationships for each coregonid species were described by the power equation:

$$\log_{10} W = a + b(\log_{10} L)$$

where W = weight (g)
L = fork length (mm)
a = y-intercept
b = slope of the regression line

Relative condition factors (K) were determined from the formula:

$$K = (W \times 10^5) \cdot L^{-3}$$

where W = weight (g)
L = fork length (mm).

RESULTS

PHYSICAL AND CHEMICAL

Breakup of the Anderson River occurred during the last week of May, 1989 and apart from a brief rise in mid-August (Cycle 8), discharge decreased steadily over the period of our study (Fig. 3). Maximum daily air temperatures recorded at Nicholson Point varied from 1 to 30 C with weekly mean maxima ranging from 9.7 C during Cycle 1 to 21.9 C in Cycle 3 (Fig. 4). Day-to-day changes in daily maximum air temperature were ≥5 C on 29 occasions (41% of the time).

The overall variation in water level recorded during the summer was 158 cm, with instantaneous values ranging from 24 cm below datum on 19 August to 134 cm above datum on 15 August (Fig. 5). Daily water levels fluctuated within a range of 28 to 105 cm, with a mean variation of 65 cm.

Complete water temperature and salinity data recorded at each sampling location are provided in Tables A1 and A2, respectively. Seasonal trends in daily mean values are illustrated in Fig. 6 and 7. Water temperatures ranged from 8.0 to 22.0 C at Station 501 and from 8.0 to 20.0 C at Station 502. Although water temperatures tended to be lower at Station 502, such interstation differences tended to be slight and similar seasonal patterns were observed at the two locations.

In terms of salinity, values recorded at Station 501 ranged from 0.0 to 8.5 $g \cdot kg^{-1}$ while conditions at Station 502 varied from 0.8 to 13.9 $g \cdot kg^{-1}$. Mean weekly salinity values at Station 502 exceeded 5.0 $g \cdot kg^{-1}$ in all but Cycle 5 (4.6), while mean values at Station 501 did not exceed 5.0 $g \cdot kg^{-1}$ until the final week of the study.

TRAP NET RESULTS

Complete daily catch summaries by sampling station and side of net are presented in Tables A3.1 to A3.13 for each of the key species. Separate break-downs are provided for large and small least and Arctic cisco. Daily catches by station for the twelve minor species are given in Tables A4.1 and A4.2. Tables A5.1 to A5.10 contain length-frequency data for the five coregonid species by sampling cycle and side of trap for each station. Length-frequency data for Arctic flounder, rainbow smelt, Pacific herring, fourhorn sculpin, saffron cod, and longnose sucker are given by sampling cycle and station in Tables A6.1 to A6.10. Table A7 contains length-frequency information relative to the twelve minor species.

Species composition

The 1989 trap netting study in Wood Bay produced 23 fish species representing 12 families (Table 2). The total combined catch of 168 476 fish included seven anadromous species (76.6%), eight marine species (22.5%), and eight typically freshwater forms (0.8%)(Table 3). Five coregonid species made up 93.6% of all anadromous fish and 71.8% of the total catch. Apart from Cycle 3, when Arctic flounder were very abundant, coregonids contributed from 80.9 to 96.8% of the weekly catch at Station 501 and from 48.0 to 76.1% at Station 502 (Table 4). Among the coregonids, least cisco usually predominated, although they were outnumbered by broad whitefish in Cycles 4,5,7 and 8 at Station 501 and in Cycle 8 at Station 502 (Fig. 8). Least cisco accounted for 59.5% of coregonids captured, followed by broad whitefish (23.0%), Arctic cisco (8.7%), lake whitefish (7.9%), and inconnu (0.9%).

Some inter-station differences in species composition and CPUE (Tables 5 and 6) probably reflect differences in salinity tolerance or preference between species or between size groups within species. CPUE tended to be higher at Station 501 for small least cisco, broad whitefish, small Arctic cisco, and longnose sucker. Marine species or more salt-tolerant forms tended to be more abundant at Station 502, including large Arctic cisco, Arctic flounder, rainbow smelt, Pacific herring, fourhorn sculpin, and saffron cod.

Arctic cisco

Size distribution and seasonal abundance: Based on 6703 measurements, fork lengths of Arctic cisco trapnetted in Wood Bay during 1989 varied from 44 to 507 mm, although most fish were either smaller than 150 mm (76%) or large fish in the 340-409 mm size range (18%). Small Arctic cisco accounted for 92% of cisco taken at Station 501 and 51% at Station 502. Individuals in the 340-409 mm size range made up 38% of the catch at Station 502 but only 5% at Station 501 (Fig. 9). Seasonal changes in the length-frequency distribution of Arctic cisco are shown in Fig. 10.

Large individuals (≥150 mm) accounted for 24.0% of the total Arctic cisco catch with overall catch rates for this group being much higher at Station 502 (37 fish·d^{-1}) than at Station 501 (8 fish·d^{-1}). At Station 501, large Arctic cisco were rare in early summer catches, and weekly CPUE values remained low until Cycle 10 (33 fish·d^{-1}). At Station 502, a major abundance peak (56 fish·d^{-1}) occurred during Cycle 4. A subsequent decrease to 8 fish·d^{-1} in Cycle 6 was followed by a steady rise over the final three weeks to a peak of 74 fish·d^{-1} during Cycle 10. The seasonal trends displayed by large Arctic cisco (Fig. 11) are directly attributable to changes in the abundance of individuals in the 340-409 mm size range which dominated this group (74.5%). As indicated in Fig. 10, the proportion of these large fish in the catch increased in late summer, and they accounted for 63.3% of the species total catch during the final two weeks of the sampling period.

Although small fish (<150 mm) comprised 76.0% of the total Arctic cisco catch, they were abundant only in early summer (Fig. 12). High catch rates during the first two weeks of sampling resulted from the presence at Station 501 of large numbers of yearlings in the 80-119 mm size range (Fig. 10). Their abundance near the river mouth in early summer suggests that large numbers of age 0 fish of the 1988 year-class had overwinterized within the Anderson River. The appearance of young-of-the-year cisco (50-69 mm) in late July (Fig. 10), produced minor abundance peaks in Cycles 5 and 6, at Stations 501 and 502, respectively, but thereafter, CPUE for small Arctic cisco decreased to near zero at both locations (Fig. 12).

Age and growth: Growth features for Arctic cisco captured in Wood Bay during 1989, are summarized in Table 7. Otolith ages for Arctic cisco ranged from 0 to 20 years but the length-frequency distribution (Fig. 9) suggests that several year-classes were poorly represented in the catch. Cisco in the 150-339 mm range accounted for just 4.6% of the total catch. Fish of this size would appear to correspond to age-groups 2 to 8/9. On the other hand, the large individuals (340-409 mm) that dominated our catches during the final two weeks were mostly age 10 to 15.

The growth of age 0 fish (1989 year-class) can be traced through the summer in Fig. 10. By early September, young-of-the-year cisco had achieved a modal fork length of approximately 80-99 mm. This is similar to the size exhibited by age 1 fish (1988 year-class) in early summer (80-109 mm).

For Arctic cisco captured in Wood Bay during 1989, the overall mathematical relationship between fork length and body weight (Table 8) is described by the equation:

$$\log_{10}W = 3.2317\ (\log_{10}L) - 5.5958$$

Sex and maturity: Female Arctic cisco outnumbered males in our samples, accounting for 66% of fish for which sex was determined (n=227). Among cisco which were of potential spawning size (≥350 mm), females made up 78%.

Most Arctic cisco captured were either juveniles or mature non-spawners. Only 2.6% of males and 8.0% of females were considered capable of spawning in 1989. Among fish ≥350 mm (n=122), 12.6% of females and 7.4% of males were determined to be current-year spawners.

Gonadosomatic index (GSI) for spawning females (n=12) ranged from 2.14 to 16.52 with a mean of 6.77. Ten of these fish were captured in July, while the other two (GSI=14.74 and 16.52) were taken on 12 and 13 August. Only two spawning males were observed during the study. These individuals (GSI=1.08 and 1.70) were taken on 14 and 15 August. No current-year spawners were observed among the large fish returning to the Anderson River in late summer (Table 9), although many of these individuals are believed to have spawned previously. Within our aged sample, the youngest Arctic cisco judged capable of spawning in the current year was an age 10 female (Table 7).

Tagging results: Floy tags were applied to 1060 Arctic cisco in 1989. Most were tagged in late summer when large fish were returning to the Anderson River. No recaptures have been reported to date.

Least cisco

Size distribution and seasonal abundance: Fork lengths for measured least cisco (n=8817) ranged from 34 to 448 mm. Small least cisco (<150 mm) greatly outnumbered large fish in the trap nets, accounting for 93% and 80% of the catch at Stations 501 and 502, respectively, and 90% of the combined species total (Fig. 13).

The numerical dominance of small individuals extended throughout the summer (Fig. 14). High catch rates at Station 501 during early summer (Fig. 15) were attributable to age 1 (70-99 mm) and, to a lesser extent, age 2 (120-149 mm) fish. Reduced catches of these cohorts resulted in a sharp decrease in CPUE during Cycle 4. Members of the 1989 year-class (50-69 mm) began to appear in the trap nets during Cycle 5 (late July). This cohort (age 0) became increasingly dominant as the number of yearling fish declined and was primarily responsible for the increased CPUE observed at Station 501 during Cycle 10 (Fig. 15).

Although much less abundant than small fish, large least cisco (≥150 mm) were common throughout the study period. Catch rates were higher at Station 502 (60 fish·d^{-1}) than at Station 501 (53 fish·d^{-1}), but seasonal CPUE patterns at the two locations were similar (Fig. 16). Catch rates for large least cisco generally declined over the first eight weeks of sampling, then increased at both sites in the final two weeks. This pattern is deceiving because the early season abundance was produced by fish in the 150-179 mm size range, which made up 72% of "large" least cisco taken in the first two weeks. Catches of this size-group decreased steadily over the summer relative to large fish until, during the final two weeks, individuals >179 mm accounted for 80% of large least cisco. Least cisco in the 290-360 mm range became increasingly abundant in late summer and were a major contributor to the observed rise in CPUE at that time.

Age and growth: Growth features of least cisco taken in Wood Bay during 1989 are shown in Table 10. Although otolith ages ranged up to 26 years, the vast majority of individuals captured were either yearlings, which dominated catches during the first four weeks of the study, or age 0 fish, which predominated during the latter part of the summer. Modal size of young-of-the-year least cisco was 50-69 mm during Cycle 5 when they first appeared in the traps, and increased to 70-89 mm by early September. The relationship between fork length and body weight for least cisco captured in Wood Bay in 1989 (Table 8) is described by the equation:

$$\log_{10}W = 3.0543\ (\log_{10}L) - 5.1835$$

Sex and maturity: Female least cisco outnumbered males by a wide margin, accounting for 65% of all fish for which sex was determined, and 67% of those of potential spawning size (≥250 mm)(n=107). Current-year spawners formed a substantial proportion of the sample as 44% of females and 36% of males examined were determined to be capable of spawning in 1989. Among fish ≥250 mm, 67% of females and 60% of males were spawners.

Gonadosomatic index values for spawning females ranged from 3.38 to 19.40 with a mean of 13.82. Mean GSI for spawning females increased from 6.09 (n=6) to 14.95 (n=41) between July and late summer. For male spawners, mean GSI increased from 1.23 (n=9) to 1.36 (n=12) over the same time period (Table 9). The youngest least cisco judged to be current-year spawners were a 6-year-old male (296 mm) and a 7-year-old female (271 mm).

Broad whitefish

Size distribution and seasonal abundance: Fork lengths were determined for 5380 broad whitefish (Fig. 17 and 18). These fish ranged from 45 to 599 mm, but the vast majority (82%) were less than 150 mm long. Among larger broad whitefish (≥150 mm), 83% exceeded 299 mm, including a group of large juveniles in the 300-429 mm length range (62%) and a group of spawning-size fish longer than 429 mm (38%). The relative proportion of large and small whitefish was approximately the same at the two sampling locations, although overall CPUE was much higher at Station 501 (299 fish·d^{-1}) than at Station 502 (128 fish·d^{-1}) (Table 6).

At Station 501, catch rates for broad whitefish remained low for the first three weeks of the study, then increased abruptly in Cycle 4. Despite a slight decrease in Cycle 6, CPUE remained high at this site through mid-summer before falling during the last two weeks (Fig. 19). By comparison, mean CPUE values remained generally low throughout the summer at Station 502. These trends reflect the abundance and distribution of young-of-the-year (age 0), which began to appear in the trap nets during Cycle 3 at a size of 40-69 mm, and which completely dominated broad whitefish catches after mid-July (Fig. 18). Prior to the appearance of the 1989 year-class, age 1 fish (70-109 mm) had been the most abundant cohort. This age-group became relatively less numerous over the summer.

Age and growth: Age and growth features of broad whitefish are summarized in Table 11. Ages for broad whitefish ranged from 0 to 16 years although catches were dominated for most of the summer by young-of-the-year. Fish of the 1989 year-class had a modal length of 50-59 mm in mid-July when they first appeared in the traps, and by early September, modal size had increased to 70-89 mm. The paucity of fish in the 150-299 mm range (Fig. 17) appears to indicate an under representation in the trap net catch of age 2, 3, and 4 whitefish. The group of large juveniles (300-429 mm) seems to consist of age 5-10 fish, while those longer than 429 mm, which represent the spawning-sized fish, include individuals age 12 and older. The

weight-length equation for broad whitefish captured in Wood Bay in 1989 (Table 8) is:

$$\log_{10}W = 3.1533\ (\log_{10}L) - 5.3260$$

Sex and maturity: Sex was determined for 112 broad whitefish, of which 78 (70%) were females. Among fish of spawning size (≥425 mm)(n=36), females accounted for 64%. Within this group of large fish, 39% of the females and 54% of the males were considered to be current-year spawners.

Mean GSI values for spawning females increased from 5.28 in July to 12.57 in late summer. Spawning males showed a mean GSI of 1.02 in July and 1.70 by late summer (Table 9). The youngest broad whitefish judged capable of spawning in the current season were an age 9 male (434 mm) and an age 13 female (500 mm)(Table 12).

Lake whitefish

Size distribution and seasonal abundance: Most of the lake whitefish measured (n=5278) were either 60-159 mm (47%) or 360-459 mm (31%) in fork length (Fig. 20 and 21). Fish of the latter group contributed a higher proportion of the catch at Station 502 (42%) than at Station 501 (25%), and increased in relative abundance over the course of the summer as the proportion of small fish decreased. These large individuals made up just 14% of the total lake whitefish catch during the first two weeks, but accounted for 43% in the final two weeks of the study. Fish in the 60-159 mm range, actually included three sub-modes (Fig. 21) representing the 1987, 1988, and 1989 year-classes. Young-of-the-year (50-79 mm) were not common in trap net catches until early August (Cycle 6). Although fork lengths ranged up to 763 mm, it is suspected that some of the largest individuals identified as lake whitefish were in fact lake whitefish x inconnu hybrids. This cross appears to be common in the Anderson River estuary (J. Reist, Department of Fisheries and Oceans, Winnipeg, MB, pers. commun.).

Lake whitefish were slightly more abundant at Station 501 than at Station 502 (81 vs 73 fish·d^{-1}) over the course of the study (Table 6), but no obvious seasonal or between-station trends were evident in the catch data (Fig. 22).

Age and growth: Age and growth features for lake whitefish are presented in Table 12. Whitefish in our sample varied in age from 0 to 20 years. Considering fork length (Fig. 20) as an indicator of age, most lake whitefish taken in the traps were either 0 to 2 or 9 to 12 years of age. The mathematical relationship between fork length and body weight for lake whitefish taken in Wood Bay during 1989 (Table 8) is described by the equation:

$$\log_{10}W = 3.2118\ (\log_{10}L) - 5.5197$$

Sex and maturity: Sex was determined for 128 lake whitefish, of which 73 (57%) were females. Among fish which, by virtue of their length (i.e., ≥375 mm FL), were potential spawners (n=86), females accounted for 53%. Within this group of large fish, 22% of the females and 30% of the males were identified as current-year spawners. An unspecified number of individuals of both sexes are believed to have spawned previously but would not have spawned in 1989.

Among females, GSI values for current-year spawners (n=10) ranged from 4.62 to 15.78. The mean GSI for spawning females increased from 6.06 (n=4) in July to 14.33 (n=6) in late summer. Similarly, for spawning males (n=12), mean GSI increased from 1.24 (n=5) to 1.73 (n=7) between July and late summer (Table 9). The youngest lake whitefish considered to be current-year spawners were 10 (female) and 11 (male) years of age (Table 12).

Several of the very large individuals captured during the study could not be identified as male or female. These fish, 577, 600, and 697 mm in fork length, are believed to have been lake whitefish x inconnu hybrids.

Inconnu

Size distribution and seasonal abundance: Inconnu exceeding 25 kg have been reported from the Anderson River (Nuligak 1971; T. Barry, Canadian Wildlife Service, Edmonton, AB, pers. commun). We captured no such large fish during this study, although had they been present in Wood Bay, they almost certainly would have been too big to have been captured in our trap nets.

Inconnu taken in this study varied in fork length from 42 to 1197 mm, with strong modes occurring in the length-frequency distribution at 50-149 mm (33%) and at 400-599 mm (37%)(Fig. 23 and 24). Fish of the former size-group tended to be more numerous at Station 501 where they accounted for 53% of the inconnu taken compared to only 15% at Station 502.

While common in the study area, inconnu were never abundant, averaging 10 fish·d^{-1} at Station 502 and 7 fish·d^{-1} at Station 501 (Table 6). CPUE remained low over the first few weeks of the study, then peaked at both stations during Cycle 5 (Fig. 25). Young-of-the-year first appeared on 17 July and this age- group formed the largest component of trap net catches through late July and early August (Fig. 24). A rise in CPUE at Station 501 during the final week resulted from an increased catch of fish in the 400-599 mm range.

Age and growth: Age and growth features for Wood Bay inconnu are summarized in Table 13. Although inconnu in our sample varied in age from 0 to 15 years, most fish captured were either young-of-the-year or in the 5 to 8 year range. As is evident from the length-frequency distribution, we captured few inconnu aged 2 to 4 or older than 10 years. The mathematical relationship between body weight and fork length for inconnu captured in Wood Bay during 1989 (Table 8) is described by the equation:

$$\log_{10}W = 3.2182\ (\log_{10}L) - 5.6367$$

Sex and maturity: Sex could be determined for only 30 of the inconnu examined, of which 21 (70%) were females. None of the fish examined was sexually mature. GSI values for six immature females (477-676 mm) varied from 0.18 to 0.28 with a mean of 0.21.

Arctic flounder

Arctic flounder made up 17.7% of the total catch in Wood Bay during 1989 and accounted for 78.6% of all marine fish taken in the traps (Tables 3 and 5). CPUE was higher overall at Station 502 ($293\ fish \cdot d^{-1}$) than at Station 501 ($201\ fish \cdot d^{-1}$)(Table 6), although large daily and weekly fluctuations occurred at both sites. The total daily catch of this species exceeded 1000 on seven occasions during the summer with a peak of 5908 on 14 July.

Flounder were taken in small numbers at Station 501 during the first two weeks of the study. A large migration into the study area occurred during Cycle 3, producing weekly CPUE values of $1537\ fish \cdot d^{-1}$ and $880\ fish \cdot d^{-1}$ at Station 501 and 502, respectively (Fig. 26). A sharp decline in CPUE during Cycles 4 and 5 was followed by a second abundance peak (primarily at Station 502) in early August (Cycles 6 and 7), during which weekly CPUE's rose again to 610 and $584\ fish \cdot d^{-1}$.

The length-frequency distribution for Wood Bay Arctic flounder is shown in Fig. 27. Based on 1829 measured specimens, total length ranged from 32 to 452 mm but within the sample, at least three distinct groups are evident. The most abundant of these involved small fish (50-129 mm) which comprised 49.9% of the total. Distinct sub-modes occurring at 60-69 mm and 80-89 mm may represent different age-groups. Arctic flounder were not aged during this study, but based on results from Phillips Bay (Bond and Erickson 1989), these sub-modes probably represent age 2 and age 3 fish. Intermediate-sized fish in the 140-199 mm range and large flounder between 220 and 289 mm total length, made up 17.7% and 23.2%, respectively of the measured sample.

Rainbow smelt

Rainbow smelt are widely distributed along the Beaufort Sea coast but appear to be most abundant near the Mackenzie and Colville rivers, in which spawning is believed to occur (Moulton and Carpenter 1986; Percy 1975; Byers and Kasnino 1980; Bond 1982; Lawrence et al. 1984).

Smelt were common in Wood Bay throughout the summer, accounting for 4.9% of the total trap net catch (Table 3). High CPUE values were recorded at Station 501 in early summer as catches at this location averaged $223\ fish \cdot d^{-1}$ during Cycle 2. Following this early peak, smelt became less abundant at Station 501 and weekly CPUE values ranged between 9 and 34 $fish \cdot d^{-1}$ over the remainder of the summer (Fig. 28). Over the period in which both trap nets were in operation, CPUE for rainbow smelt was consistently higher at Station 502. Catches at this location peaked at $251\ fish \cdot d^{-1}$ during Cycle 8 (Fig. 28).

Although rainbow smelt (n=2339) varied in fork length from 38 to 295 mm, catches were dominated throughout the summer by fish in the 60-119 mm size range which comprised 76.0% of the measured sample (Fig. 29). Smelt in the 140-189 mm range were also common, accounting for 13.0% of the total sample. Smelt of this size were common, however, only during the first three weeks of the study when they made up 29.0% of the catch at Station 501. Fish exceeding 200 mm were rare in Wood Bay, contributing just 2.1% of the total sample.

The length-frequency distribution of rainbow smelt in Wood Bay differed dramatically from that observed at Phillips Bay on the Yukon coast in 1986 (Bond and Erickson 1989). In that study, 63.0% of trap netted smelt were between 240 and 279 mm fork length, while fish smaller than 200 mm accounted for just 20.4% of the catch. The large fish at Phillips Bay represented the spawning segment of the population which was not encountered in our Wood Bay catches.

Fourhorn sculpin

This sculpin is an important member of the Beaufort Sea ichthyocommunity, providing forage for many species (Kendel et al. 1975; Galbraith and Hunter 1975; Lawrence et al. 1984; Bond and Erickson 1989). Fourhorn sculpin made up 1.2% of the total trap net catch in Wood Bay in 1989, ranking third in abundance among marine species (Table 3). Throughout the summer, CPUE was consistently higher at Station 502 than at Station 501 (Fig. 30). Overall CPUE values recorded at these two sites were 34 and 4 $fish \cdot d^{-1}$, respectively (Table 6). Trap netted

sculpin (n=1229) varied in total length from 36 to 372 mm, the majority (85.4%) being in the 70-209 mm size range (Fig. 31).

Pacific herring

Pacific herring of the Beaufort Sea spawn around the time of ice breakup (late June) in deep coastal embayments such as Tuktoyaktuk Harbour (Bond 1982) and Liverpool Bay (Gillman and Kristofferson 1984) in which they have spent the winter. Immediately after spawning, they disperse widely to foraging areas throughout the southern Beaufort Sea. The return migration to the overwintering sites begins in late August (Bond 1982).

Pacific herring accounted for 2.9% of the total trap net catch in 1989 (Table 3). Herring began to enter the study area during mid-July (Cycle 3) and were common in our catches until early August (Cycle 6)(Fig. 32). A typically marine species, herring tended to be much more abundant at Station 502, where CPUE averaged 73 fish·d^{-1}, than at Station 501 (15 fish·d^{-1}) (Table 6).

All herring taken in Wood Bay during the study were small, immature specimens. Fork lengths, obtained from 1124 individuals, varied from 43 to 186 mm with fish in the 70-99 mm size range accounting for 58% of the measured sample (Fig. 33). On the basis of length-frequency distribution, the catch is thought to consist of three age-groups. Prior to Cycle 8, most fish were between 60 and 99 mm (age 2). Herring less than 60 mm fork length (age 1) did not appear in the trap nets until Cycle 8. In the southern Beaufort Sea, Pacific herring attain a mean length of approximately 37 mm (24-44 mm) by the end of their first summer (Lawrence et al. 1984).

Saffron cod

Although common along the Beaufort Sea coast, saffron cod usually makes up less than 1.5% of the total catch in trap net studies (Moulton et al. 1985; Cannon et al. 1987; Bond and Erickson 1989). During the present study, saffron cod accounted for just 0.4% of total catch (Table 3). More than 96% of those taken were captured at Station 502. Average CPUE for the study was 13 fish·d^{-1} at Station 502 compared with 0.4 fish·d^{-1} at Station 501 (Table 6). However, apart from Cycle 3, when the weekly CPUE at Station 502 was 82 fish·d^{-1}, catches were generally low, averaging less than 5 fish·d^{-1} during Cycles 4 to 8, inclusive, before rising over the final two weeks (Fig. 34).

Total length measurements were obtained for 559 saffron cod. Lengths varied from 57 to 513 mm, but most fish were either small individuals in the 110-179 mm range (43%) or large fish between 320 and 449 mm (42%)(Fig. 35). Within the group of large fish, there appear to be two distinct modes, one at 350-359 mm and the other in the 410-419 mm size interval. Fish in the 200-299 mm range accounted for just 4% of the sample.

The length-frequency distribution for saffron cod at Wood Bay differed considerably from that observed at Phillips Bay in 1986 (Bond and Erickson 1989). In that study, strong modes occurred at 240-259 mm and at 400-419 mm, 61% of the sample was in the 200-299 mm range, and only 4% of the fish captured were smaller than 200 mm TL.

Longnose sucker

The longnose sucker is the only North American sucker that occurs also in the Arctic rivers of Asia. Although a freshwater species, it is often encountered in brackish water near the mouths of Arctic streams (Scott and Crossman 1973). Throughout its range this sucker is an important forage species and is commonly taken in subsistence fisheries.

Longnose sucker made up 0.8% of the total trapnet catch in Wood Bay during 1989 (Table 3). It was restricted for the most part to the inner estuary, yielding an average of 18 fish·d^{-1} at Station 501 compared with only 0.4 fish·d^{-1} at Station 502 (Table 6). Weekly CPUE values at Station 501 (Fig. 36) ranged from 30 to 41 fish·d^{-1} during the first three weeks of our study before declining to less than 10 fish·d^{-1} in Cycles 5 and 6. A subsequent rise to 38 fish·d^{-1} in Cycle 7 suggests a return to the Anderson River in mid-August.

The length-frequency distribution for longnose sucker occurring in the trap nets was bimodal (Fig. 37). Suckers (n=934) ranged in fork length from 58 to 598 mm with 52% of the sample falling in the 80-169 mm size range and 28% between 420 and 519 mm.

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Table 1. Inclusive dates for sampling cycles referred to in this report and amount of fishing effort (days) at each trap by cycle, Wood Bay, 1989[1].

Cycle	Date	Fishing Effort (d) Station 501 Side 1	Station 501 Side 2	Station 502 Side 1	Station 502 Side 2
1	28 June to 4 July	7.13	7.19		
2	5 July to 11 July	7.00	7.00		
3	12 July to 18 July	7.00	7.00	5.00	5.00
4	19 July to 25 July	7.00	7.00	7.00	7.00
5	26 July to 1 August	7.00	7.00	7.00	7.00
6	2 August to 8 August	7.00	7.00	7.00	7.00
7	9 August to 15 August	6.83	6.83	6.41	6.41
8	16 August to 22 August	7.00	7.00	7.42	7.42
9	23 August to 29 August	7.00	7.00	7.00	7.00
10	30 August to 5 September	7.00	7.00	7.00	7.00
Total		69.96	70.02	53.83	53.83

[1] Side 1 refers to the Anderson River side of the lead.

Table 2. Scientific and common names[1] of fishes captured at Wood Bay, 1989.

Scientific Name	Common Name	Code
Family Petromyzontidae		
Lampetra japonica (Martens)	Arctic lamprey	LAMP
Family Clupeidae		
Clupea harengus pallasi Valenciennes	Pacific herring	PCHR
Family Salmonidae		
Coregonus autumnalis (Pallas)	Arctic cisco	ARCS
Coregonus sardinella Valenciennes	Least cisco	LSCS
Coregonus clupeaformis (Mitchill)	Lake whitefish	LKWT
Coregonus nasus (Pallas)	Broad whitefish	BDWT
Prosopium cylindraceum (Pallas)	Round whitefish	RDWT
Stenodus leucichthys (Güldenstadt)	Inconnu	INCO
Salvelinus alpinus (Linnaeus)	Arctic charr	CHAR
Thymallus arcticus (Pallas)	Arctic grayling	ARGR
Family Osmeridae		
Osmerus mordax (Mitchill)	Rainbow smelt	RNSM
Mallotus villosus (Müller)	Capelin	CPLN
Family Esocidae		
Esox lucius Linnaeus	Northern pike	NRPK
Family Cyprinidae		
Couesius plumbeus (Agassiz)	Lake chub	LKCH
Family Catostomidae		
Catostomus catostomus (Forster)	Longnose sucker	LNSK
Family Gadidae		
Lota lota (Linnaeus)	Burbot	BRBT
Eleginus gracilis (Tilesius)	Saffron cod	SFCD
Boreogadus saida (Lepechin)	Arctic cod	ARCD
Family Gasterosteidae		
Pungitius pungitius (Linnaeus)	Ninespine stickleback	NSSB
Family Stichaeidae		
Acantholumpenus mackayi (Gilbert)	Blackline prickleback[2]	BLPB
Family Cottidae		
Myoxocephalus quadricornis (Linnaeus)	Fourhorn sculpin	FHSC
Family Pleuronectidae		
Liopsetta glacialis (Pallas)	Arctic flounder	ARFL
Platichthys stellatus (Pallas)	Starry flounder	STFL

[1] From Robins et al. (1980) except as noted.
[2] Common name recommended by Legendre et al. (1975).

Table 3. Total catch and species composition in trap nets, Wood Bay, 1989.

Species	Number Captured	Percent of Total Catch	Percent of Anadromous Catch
Anadromous			
Least cisco	71 949	42.7	55.7
Broad whitefish	27 850	16.5	21.6
Arctic cisco	10 491	6.2	8.1
Lake whitefish	9 602	5.7	7.4
Rainbow smelt	8 191	4.9	6.3
Inconnu	1 037	0.6	0.8
Arctic charr	9	<0.1	<0.1
Marine			
Arctic flounder	29 822	17.7	
Pacific herring	4 950	2.9	
Fourhorn sculpin	2 081	1.2	
Saffron cod	743	0.4	
Blackline prickleback	197	0.1	
Starry flounder	121	0.1	
Arctic cod	16	<0.1	
Capelin	1	<0.1	
Freshwater			
Longnose sucker	1 260	0.8	
Northern pike	71	<0.1	
Burbot	46	<0.1	
Ninespine stickleback	20	<0.1	
Arctic grayling	13	<0.1	
Arctic lamprey	4	<0.1	
Round whitefish	1	<0.1	
Lake chub	1	<0.1	
Total	168 476		

Table 4. Weekly contribution by coregonids to total trapnet catch at each sampling station

Cycle	Station 501 Total Catch	Station 501 Percent Coregonids	Station 502 Total Catch	Station 502 Percent Coregonids
1	15 382	93.0		
2	15 542	86.9		
3	22 104	48.2	8 718	39.7
4	5 612	86.7	5 309	48.6
5	7 875	91.5	6 724	65.8
6	9 480	80.9	13 109	50.1
7	9 006	90.6	9 141	53.0
8	5 370	96.8	4 845	48.0
9	7 384	90.5	5 348	76.1
10	12 083	94.3	5 440	55.0
Total	109 838	81.6	58 634	53.3

Table 5. Distribution of 1989 trap net catch by station and codend[1].

Species	Station 501			Station 502			Grand Total
	Side 1	Side 2	Total	Side 1	Side 2	Total	
Large least cisco	931	2 760	3 691	1 213	2 019	3 232	6 923
Small least cisco	23 174	29 177	52 351	6 414	6 261	12 675	65 026
Broad whitefish	7 336	13 614	20 950	3 807	3 093	6 900	27 850
Large Arctic cisco	197	342	539	601	1 376	1 977	2 516
Small Arctic cisco	3 128	2 811	5 939	1 180	856	2 036	7 975
Lake whitefish	3 101	2 595	5 696	1 849	2 057	3 906	9 602
Rainbow smelt	2 301	1 122	3 423	3 682	1 086	4 768	8 191
Inconnu	215	275	490	139	408	547	1 037
Arctic charr	2	1	3	4	2	6	9
Arctic flounder	6 142	7 916	14 058	5 390	10 374	15 764	29 822
Pacific herring	431	589	1 020	2 364	1 566	3 930	4 950
Fourhorn sculpin	158	84	242	928	911	1 839	2 081
Saffron cod	18	9	27	527	189	716	743
Blackline prickleback	1	1	2	154	41	195	197
Starry flounder	36	13	49	46	26	72	121
Arctic cod	2		2	10	4	14	16
Capelin				1		1	1
Longnose sucker	644	595	1 239	11	10	21	1 260
Northern pike	14	49	63	3	5	8	71
Burbot	21	17	38	5	3	8	46
Ninespine stickleback	8	3	11	5	4	9	20
Arctic grayling	5	5	10	2	1	3	13
Arctic lamprey	1	1	2	1	1	2	4
Round whitefish	1		1				1
Lake chub	1		1				1
Total	47 868	61 979	109 847	28 336	30 293	58 629	168 476

[1] Side 1 refers to the Anderson River side of the lead.

Table 6. Overall CPUE (number·d^{-1}) for the major fish species by station and codend[1].

Species	Station 501			Station 502		
	Side 1	Side 2	Combined	Side 1	Side 2	Combined
Large least cisco	13.3	39.4	52.7	22.5	37.5	60.0
Small least cisco	331.3	416.7	748.0	119.2	116.3	235.5
Broad whitefish	104.9	194.4	299.3	70.7	57.5	128.2
Large Arctic cisco	2.8	4.9	7.7	11.2	25.6	36.7
Small Arctic cisco	44.7	40.2	84.9	21.9	15.9	37.8
Lake whitefish	44.3	37.1	81.4	34.4	38.2	72.6
Inconnu	3.1	3.9	7.0	2.6	7.6	10.2
Arctic flounder	87.8	113.1	200.9	100.1	192.7	292.9
Rainbow smelt	32.9	16.0	48.9	68.4	20.2	88.6
Pacific herring	6.2	8.4	14.6	43.9	29.1	73.0
Fourhorn sculpin	2.3	1.2	3.5	17.2	16.9	34.2
Longnose sucker	9.2	8.5	17.7	0.2	0.2	0.4
Saffron cod	0.3	0.1	0.4	9.7	3.6	13.3

[1] Side 1 refers to the Anderson River side of the lead.

Table 7. Mean fork length (mm), mean weight (g), mean condition factor (K), sex ratio, and maturity by age group for Arctic cisco at Wood Bay,1989.

Otolith Age (yr)	Number of Fish	Fork Length			Weight			Mean Condition Factor (K)	Males		Females		Number Sex Unknown
		Mean	SD	Range	Mean	SD	Range		n	% Mature	n	% Mature	
0	56[1]	58	6.4	45-74									56
1	50[2]	93	9.9	70-115									50
2	12	164	21.1	137-197	40	19.0	18-74	0.83			6	0	6
3	5	187	32.3	142-220	63	33.6	22-104	0.87			2	0	3
4	14	245	26.0	188-297	134	47.0	51-249	0.88	7	0	6	0	1
5	7	257	22.2	210-278	167	42.8	79-216	0.96	3	0	4	0	
6	10	293	15.5	258-312	236	41.4	162-300	0.93	6	0	4	0	
7	4	314	8.4	303-323	299	12.3	284-314	0.97	1	0	3	0	
8	6	328	14.3	304-340	328	43.1	265-366	0.92	4	0	2	0	
9	6	333	11.7	317-347	360	43.0	292-405	0.98	5	0	1	0	
10	4	375	27.6	335-397	544	148.0	330-627	1.01	1	0	3	33	
11	6	364	11.7	355-387	495	78.6	421-647	1.02	1	0	5	20	
12	2	369	1.4	368-370	570	56.6	530-610	1.14	1	0	1	0	
13	2	396	7.8	390-401	636	161.2	522-750	1.02	1	0	1	0	
14	4	416	24.7	380-437	813	246.3	476-1063	1.11			4	25	
15	9	414	27.9	370-462	790	203.5	517-1126	1.10	2	0	7	57	
16	1	390			600			1.01			1	0	
17	3	436	25.5	410-461	929	245.5	684-1175	1.10			3	67	
18													
19	1	478			1512			1.38			1	0	
20	2	464	60.8	421-507	1250	424.3	950-1550	1.23			2	100	
Total	204								32		56		116

[1] Captured 15-29 July; Aged by length-frequency.
[2] Captured 28 June; Aged by length-frequency.

Table 8. Weight-length regressions for coregonids captured in Wood Bay, 1989.

Species	n	Length Range(mm)	Slope (b)	Intercept (a)	Std Error of Est. b	Std Error of Est. a	r^2
Arctic cisco	253	122-507	3.2317	-5.5958	0.0200	0.0497	0.9905
Least cisco	174	126-409	3.0543	-5.1835	0.0285	0.0688	0.9852
Broad whitefish	142	72-582	3.1533	-5.3260	0.0185	0.0456	0.9952
Lake whitefish	172	86-697	3.2118	-5.5197	0.0143	0.0355	0.9966
Inconnu	58	87-676	3.2182	-5.6367	0.0252	0.0615	0.9966

Table 9. Comparison of Gonadosomatic Index data between early and late summer by species, sex, and maturity category.[1]

Species/Category	July No. Examined	July GSI Mean	July GSI Range	23 Aug - 5 Sept No. Examined	23 Aug - 5 Sept GSI Mean	23 Aug - 5 Sept GSI Range
Least Cisco (250+ mm)						
Females						
Spawners	6	6.09	3.38-7.68	41	14.95	9.05-19.40
Non-spawners	14(7)	1.25	0.39-2.30	8(3)	0.88	0.37- 1.30
Males						
Spawners	9	1.23	0.95-1.67	12	1.36	0.75- 2.01
Non-spawners	4(0)	-	-	9(4)	0.63	0.58- 0.71
Lake Whitefish (375+ mm)						
Females						
Spawners	4	6.06	4.62-7.46	6	14.33	11.62-15.78
non-spawners	0	-	-	35	1.30	0.48- 3.29
Males						
Spawners	5	1.24	0.88-1.73	7	1.73	1.11- 2.47
Non-spawners	7(4)	0.47	0.16-0.66	21(8)	0.19	0.13- 0.34
Broad Whitefish (425+ mm)						
Females						
Spawners	4	5.28	3.19-7.32	5	12.57	9.44-14.32
Non-spawners	0	-	-	14	1.47	0.70- 2.48
Males						
Spawners	4(3)	1.02	0.80-1.14	3	1.70	1.21- 2.23
Non-spawners	3	0.49	0.38-0.63	3(1)	0.27	-
Arctic Cisco (350+ mm)						
Females						
Spawners	0	5.00	2.14-8.85	0	-	-
Non-spawners	17(16)	0.80	0.43-1.90	38	1.52	0.30- 6.94
Males						
Spawners	0	-	-	0	-	-
Non-spawners	11(5)	0.33	0.19-0.69	1	0.16	-

[1] Numbers in parentheses indicate sample size for GSI calculations where all examined fish not used. Where not used indicates that gonad weight was <1 g. All fish were selected from size ranges that would eliminate most juveniles.

Table 10. Mean fork length (mm), mean weight (g), mean condition factor (K), sex ratio, and maturity by age group for least cisco at Wood Bay,1989.

Otolith Age (yr)	Number of Fish	Fork Length Mean	SD	Range	Weight Mean	SD	Range	Mean Condition Factor (K)	Males n	% Mature	Females n	% Mature	Number Sex Unknown
0	50[1]	52	5.4	42-65									50
1	16[2]	82	5.4	75-95	3	0.9	2-5	0.51					16
2	9	150	15.4	126-172	28	6.4	18-38	0.84	4	0	4	0	1
3	11	181	12.9	153-207	52	15.2	30-89	0.85	3	0	7	0	1
4	10	217	13.4	198-237	82	14.4	64-111	0.80			10	0	
5	5	253	15.6	232-267	143	31.5	115-187	0.88	2	0	3	0	
6	9	260	16.3	245-296	149	28.6	115-204	0.84	7	14	2	0	
7	6	274	12.2	253-290	174	31.1	124-210	0.84	4	67	2	50	
8	2	306	6.4	301-310	330	26.2	311-348	1.16			2	0	
9	2	315	15.6	304-326	277	67.9	229-325	0.88			2	50	
10	2	332	2.1	330-333	303	9.9	296-310	0.83			2	100	
11													
12	1	320			267			1.12	1	100			
13													
14	2	339	2.1	337-340	391	39.6	363-419	1.01	1	100	1	100	
15	1	321			305			0.92			1	0	
16	1	365			546			1.12			1	100	
17													
18													
19	3	356	5.5	352-362	409	46.2	372-461	0.91	1	100	2	100	
20	2	382	12.7	373-391	517	153.4	408-625	0.92			2	50	
21													
22	1	376			470			0.88			1	100	
23													
24													
25	2	398	16.3	386-409	636	91.9	571-701	1.01			2	100	
26	2	392	9.2	385-398	639	65.8	592-685	1.07	1	0	1	100	
Total	137								24		45		

[1] Captured 26-29 July; Aged by length-frequency.
[2] Captured 27 June; Aged by length-frequency.

Table 11. Mean fork length (mm), mean weight (g), mean condition factor (K), sex ratio, and maturity by age group for broad whitefish at Wood Bay,1989.

Otolith Age (yr)	Number of Fish	Fork Length Mean	SD	Range	Weight Mean	SD	Range	Mean Condition Factor (K)	Males n	% Mature	Females n	% Mature	Number Sex Unknown
0	50[1]	57	5.0	47-66									50
1	11	99	12.0	72-116	9	3.3	2-14	0.88					11
2	18	172	34.3	125-241	63	37.5	23-144	1.10	1	0	9	0	8
3	7	262	19.4	237-287	202	39.3	144-256	1.11	1	0	5	0	1
4	1	296			290			1.12	1	0			
5	3	319	3.1	316-322	357	8.1	348-364	1.10	1	0	2	0	
6	8	318	19.2	290-350	356	48.6	286-425	1.11	3	0	5	0	
7	8	348	23.8	303-384	490	145.0	279-773	1.13	4	0	4	0	
8	5	388	41.6	343-449	703	247.9	490-1105	1.16	4	0	1	0	
9	6	410	16.5	396-434	851	130.3	731-1054	1.23	2	50	4	0	
10	6	424	23.4	396-449	1002	258.1	692-1240	1.30	2	50	3	0	1
11													
12	1	460			1210			1.24			1	0	
13	6	476	28.1	432-505	1336	442.3	845-1875	1.21	1	100	5	40	
14	5	498	50.4	450-582	1446	610.8	920-2469	1.12	1	0	4	50	
15	4	529	34.2	498-572	1873	535.5	1270-2348	1.24	2	0	2	100	
16	4	526	30.5	494-566	1989	257.3	1749-2236	1.37	2	50	2	100	
Total	143								25		47		71

[1] Captured 13-16 July; Aged by length-frequency.

Table 12. Mean fork length (mm), mean weight (g), mean condition factor (K), sex ratio, and maturity by age group for lake whitefish at Wood Bay,1989.

Otolith Age (yr)	Number of Fish	Fork Length Mean	SD	Range	Weight Mean	SD	Range	Mean Condition Factor (K)	Males n	% Mature	Females n	% Mature	Number Sex Unknown
0	14[1]	57	4.1	51-64									
1	11	102	13.2	86-123	9	3.5	5-14	0.79					14
2	10	140	13.3	115-156	23	5.9	14-32	0.83					11
3	7	193	18.5	163-217	70	19.5	40-96	0.95			2	0	9
4	6	223	22.1	183-245	101	28.3	52-131	0.89			3	0	4
5	2	263	12.0	255-272	170	28.3	150-190	0.93	1	0	3	0	2
6	11	298	23.1	269-338	270	76.5	166-400	0.98			1	0	1
7	3	330	12.9	321-345	359	36.2	336-401	1.00	7	0	4	0	
8	2	346	7.1	341-351	444	30.4	422-465	1.07	1	0	2	0	
9	3	369	15.5	353-384	565	121.5	444-687	1.11	2	0			
10	3	375	13.0	367-390	567	71.9	525-650	1.07	1	0	2	0	
11	6	409	18.4	387-432	743	153.5	606-984	1.08	1	0	2	50	
12	5	429	14.7	412-446	852	120.5	736-998	1.07	4	50	2	0	
13									3	67	2	100	
14	3	462	17.0	452-482	993	127.2	900-1138	1.00	2	50	1	0	
15	5	471	14.2	456-491	1310	116.7	1216-1488	1.25	1	0	4	25	
16	1	486			1333			1.16	1	0			
17	2	589	16.3	577-600	2262	461.7	1935-2588	1.11					2
18													
19													
20	1	697			3675			1.09					1
Total	95								24		28		44

[1] Captured 28-31 July; Aged by length-frequency.

Table 13. Mean fork length (mm), mean weight (g), mean condition factor (K), sex ratio, and maturity by age group for inconnu at Wood Bay,1989.

Otolith Age (yr)	Number of Fish	Fork Length Mean	SD	Range	Weight Mean	SD	Range	Mean Condition Factor (K)	Males n	% Mature	Females n	% Mature	Number Sex Unknown
0	8	117	14.1	87-131	12	5.0	3-19	0.72					8
1	12	150	15.3	123-186	23	8.5	11-46	0.64			1	0	11
2	7	248	27.2	211-298	124	45.4	72-206	0.78			3	0	4
3	8	316	36.8	259-361	277	107.2	140-454	0.84	2	0	3	0	3
4													
5	4	409	0.5	409-410	621	36.1	600-675	0.91	2	0	2	0	
6	6	455	20.9	417-472	854	128.9	650-1000	0.91	2	0	3	0	1
7	4	488	7.0	478-494	1050	91.3	950-1100	0.91	1	0	2	0	1
8	3	517	39.5	477-556	1202	281.7	971-1516	0.86			3	0	
9	1	530			1450			0.97	1	0			
10	2	564	66.5	517-611	1597	526.1	1225-1969	0.88			2	0	
11	1	588			1675			0.82			1	0	
12													
13													
14													
15	1	676			2503			0.81			1	0	
Total	57								8		21		28

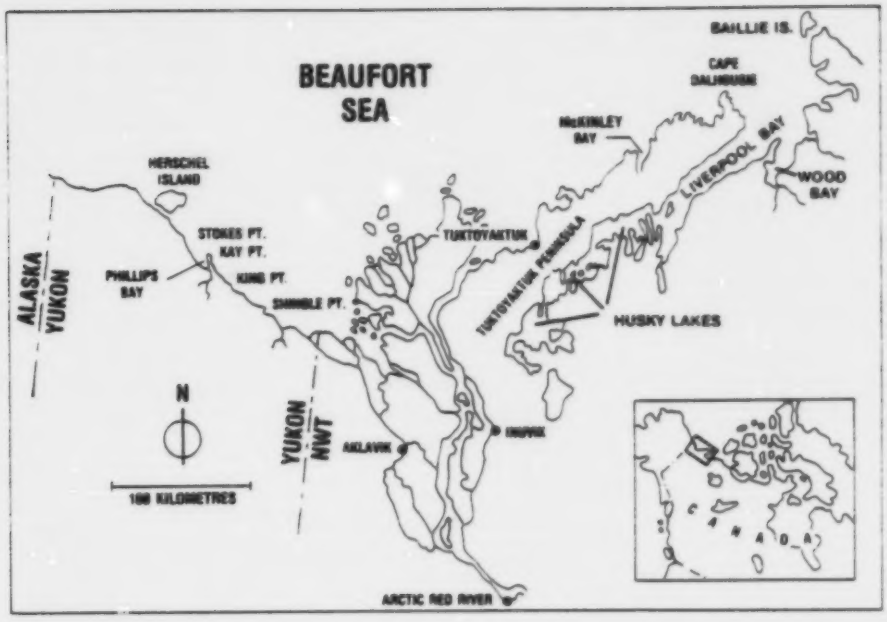

Fig. 1. The Mackenzie Delta and southern Beaufort Sea showing the location of the study area.

Fig. 2. Wood Bay showing location of trap net stations, 1989.

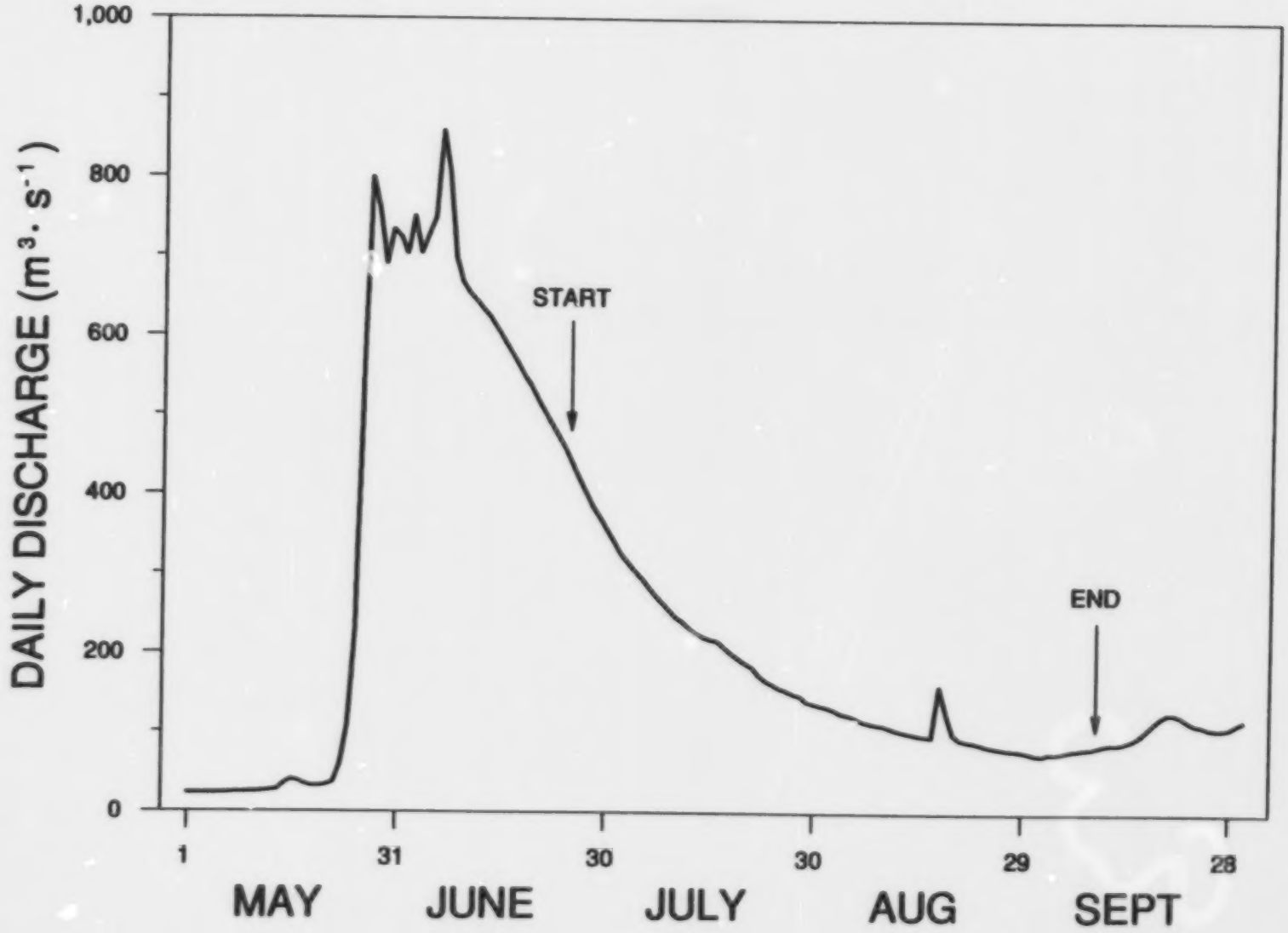

Fig. 3. Daily discharge of the Anderson River from 1 May to 30 September, 1989 (Data provided by Water Survey of Canada, Environment Canada, NWT Programs).

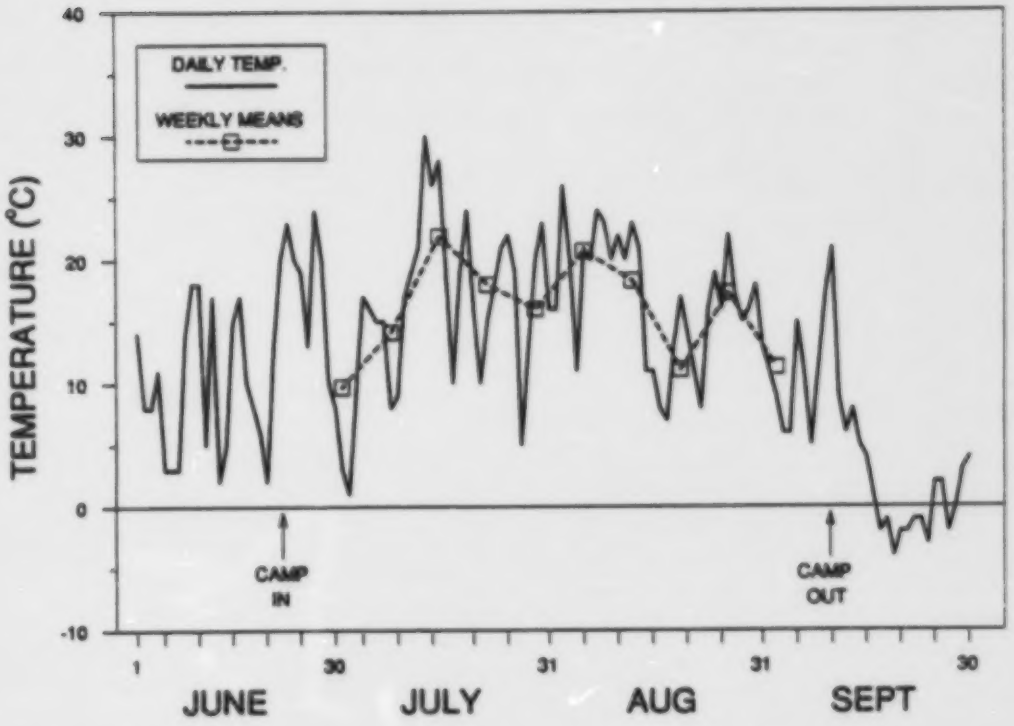

Fig. 4. Maximum daily air temperatures recorded at Nicholson Point, 1 June - 30 September, 1989 by Atmospheric Environment Service, Environment Canada.

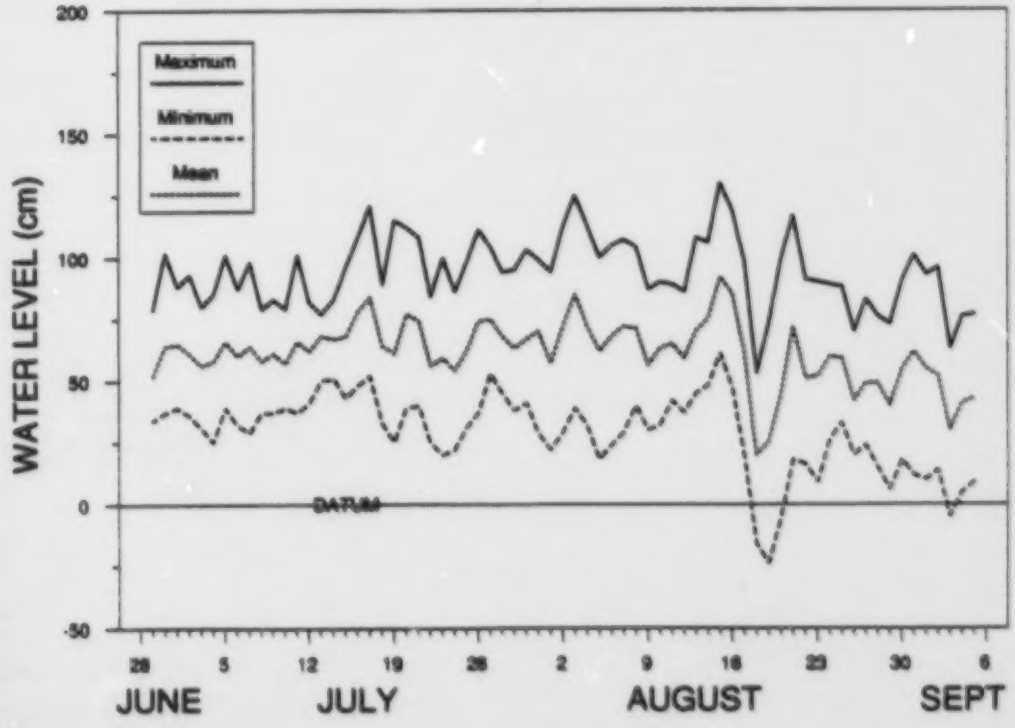

Fig. 5. Water levels recorded at Wood Bay during 1989.

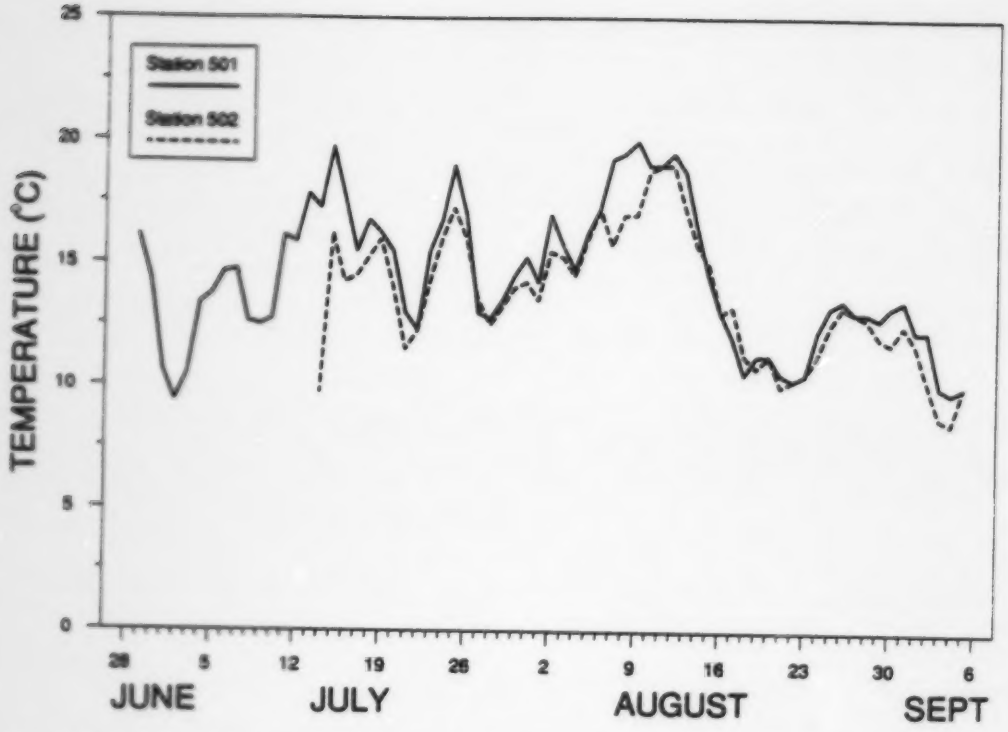

Fig. 6. Mean daily water temperatures recorded at the trap net stations, Wood Bay, 1989.

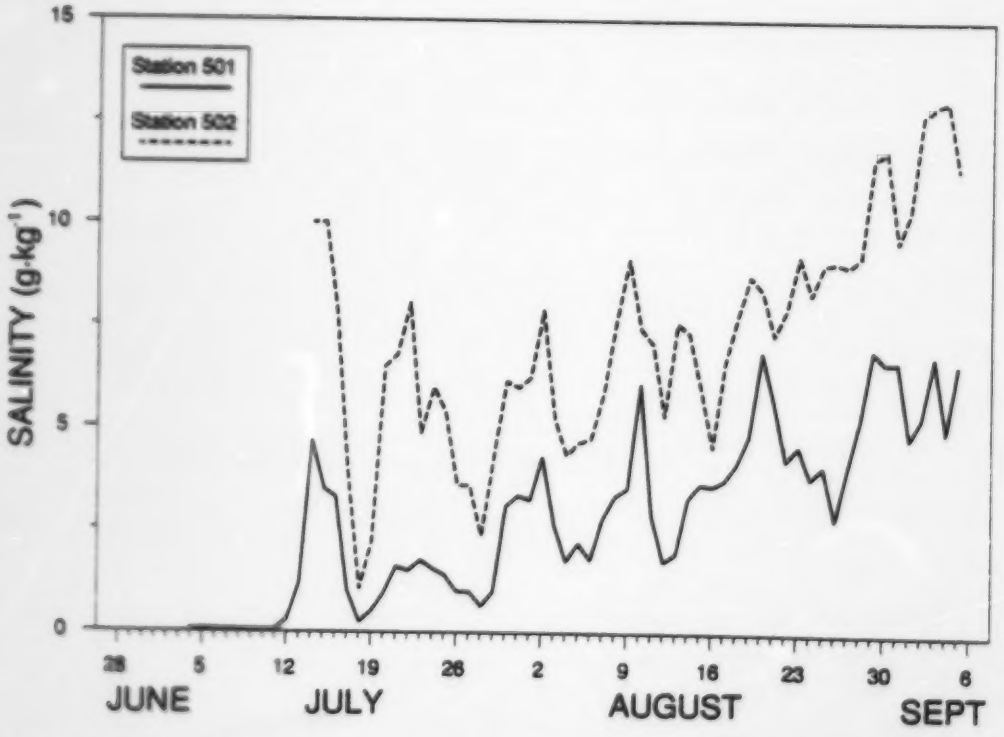

Fig. 7. Mean daily salinity values recorded at the trap net stations, Wood Bay, 1989.

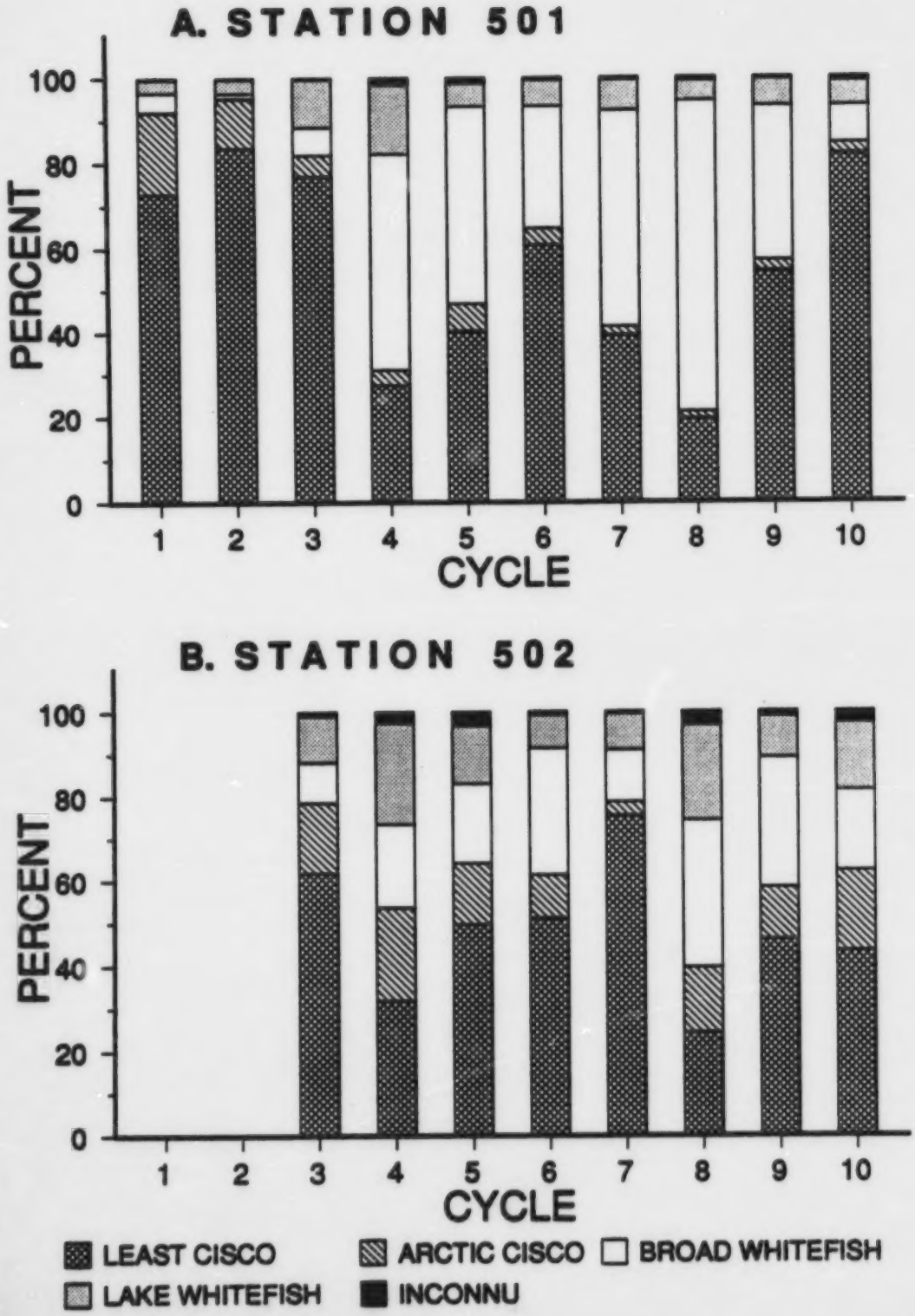

Fig. 8. Relative abundance of five coregonid species in weekly trap net catches at each sampling location.

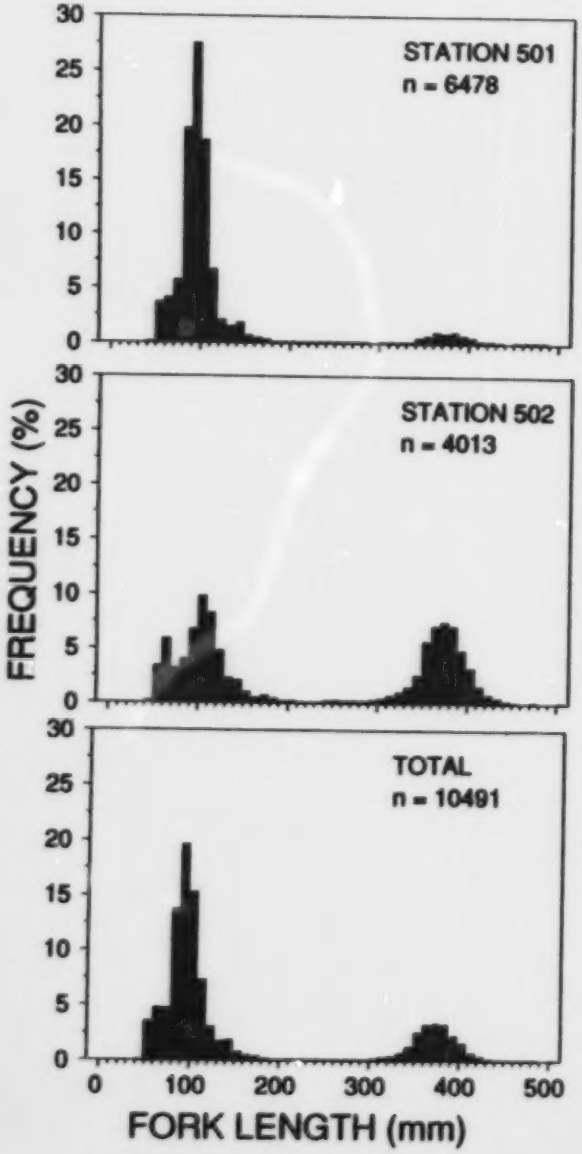

Fig. 9. Length-frequency distribution for Arctic cisco captured in trap nets at Wood Bay, 1989.

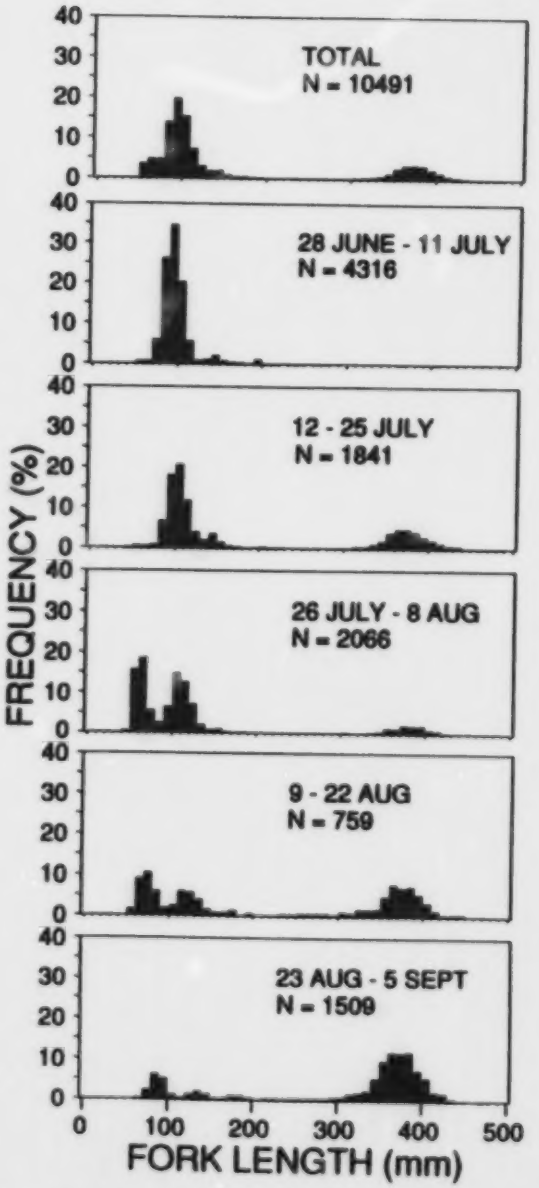

Fig. 10. Seasonal variation in length-frequency distribution of Arctic cisco captured in trap nets at Wood Bay during summer, 1989.

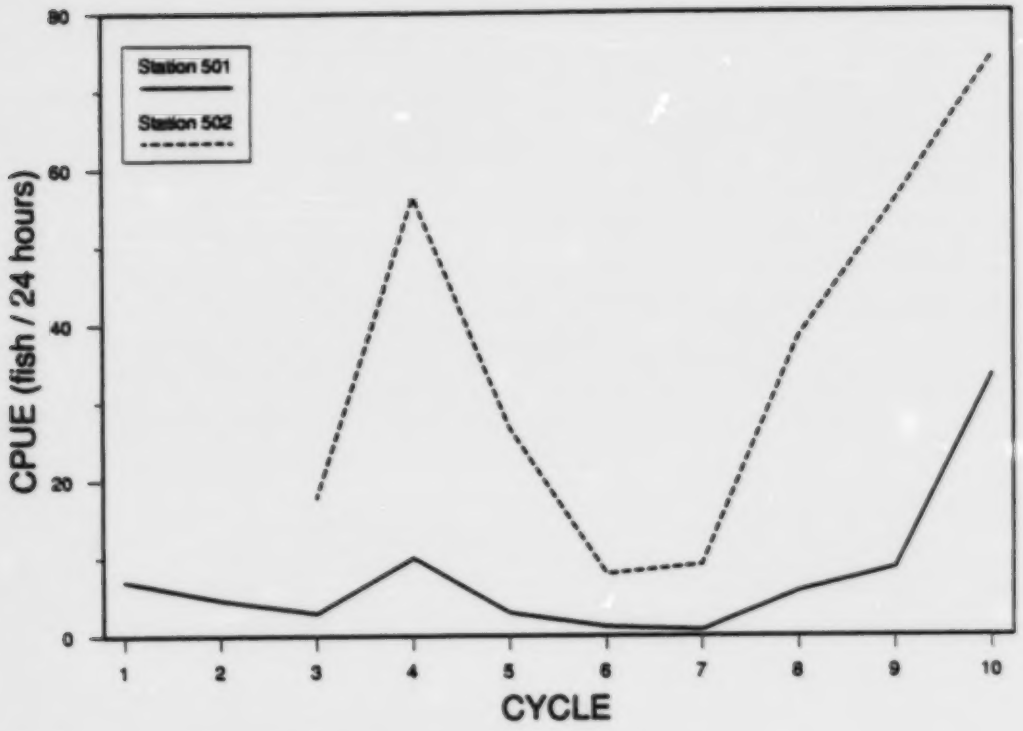

Fig. 11. Seasonal trends in CPUE for large Arctic cisco at Wood Bay, 1989.

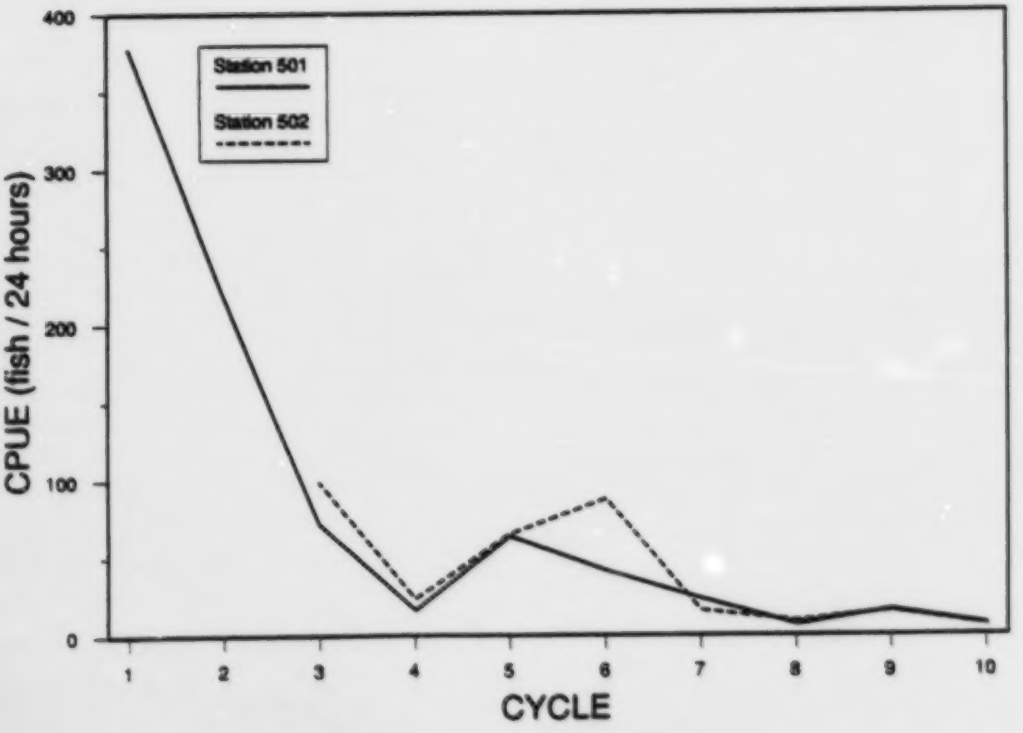

Fig. 12. Seasonal trends in CPUE for small Arctic cisco at Wood Bay, 1989.

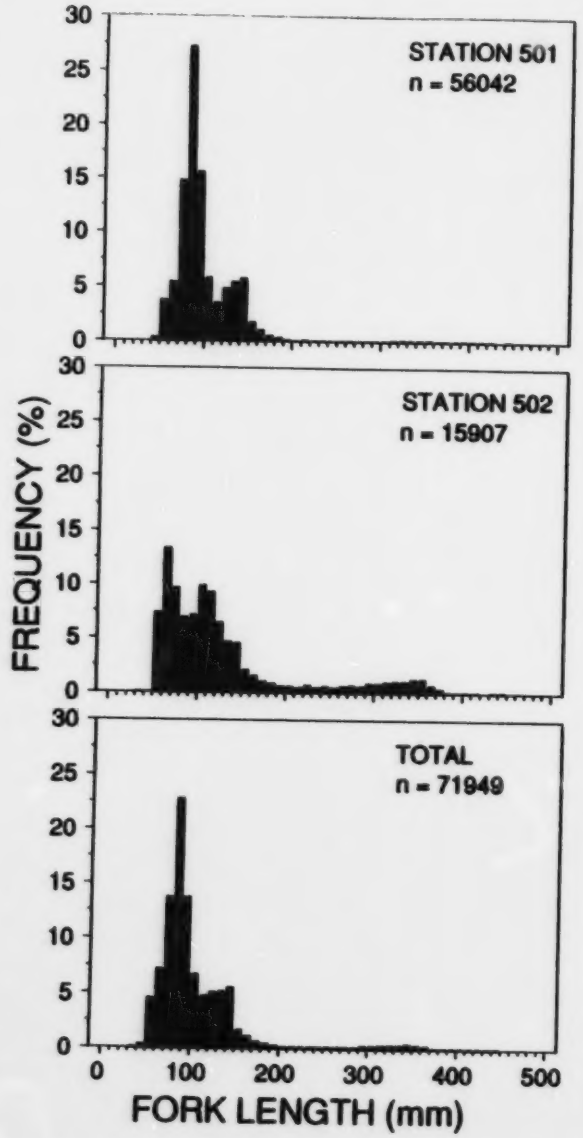

Fig. 13. Length-frequency distribution for least cisco captured in trap nets at Wood Bay, 1989.

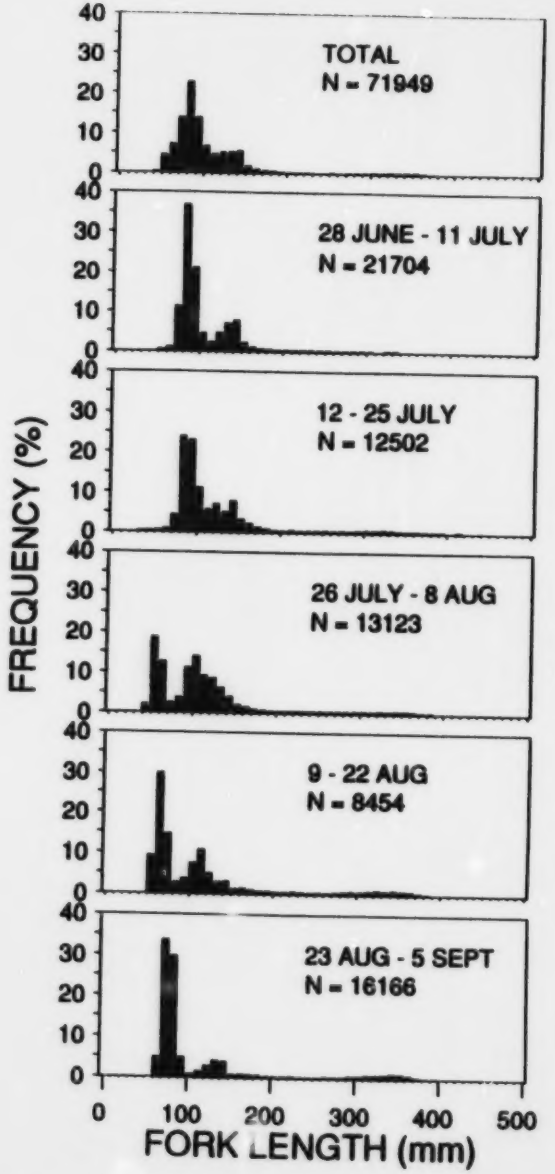

Fig. 14. Seasonal variation in length-frequency distribution of least cisco captured in trap nets at Wood Bay during summer, 1989.

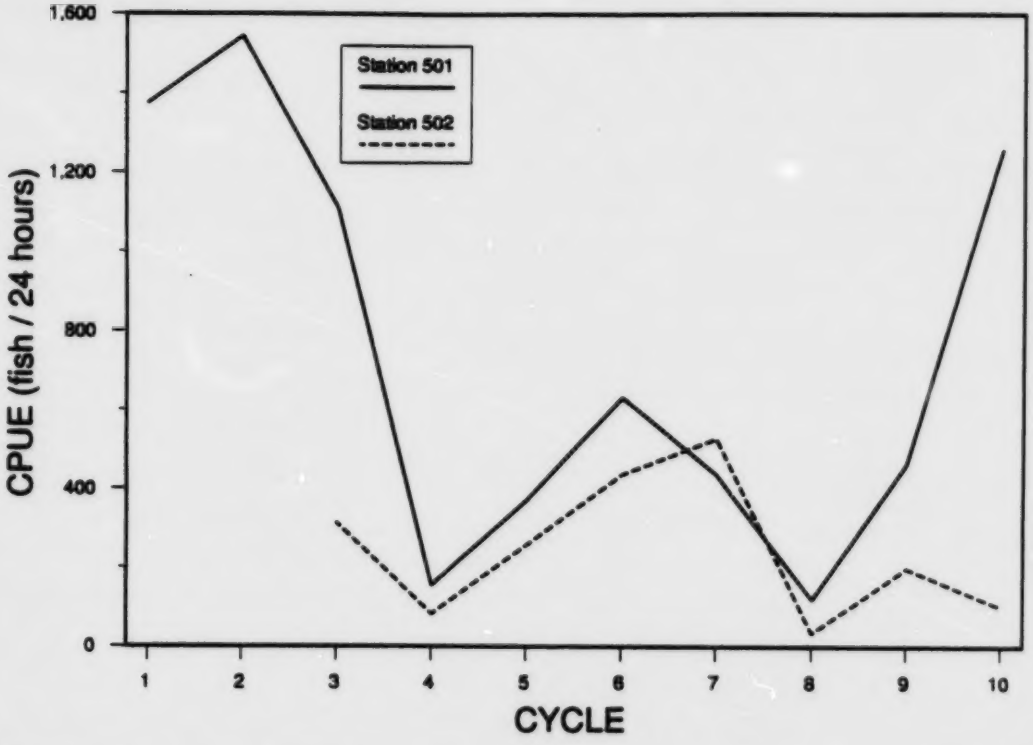

Fig. 15. Seasonal trends in CPUE for small least cisco at Wood Bay, 1989.

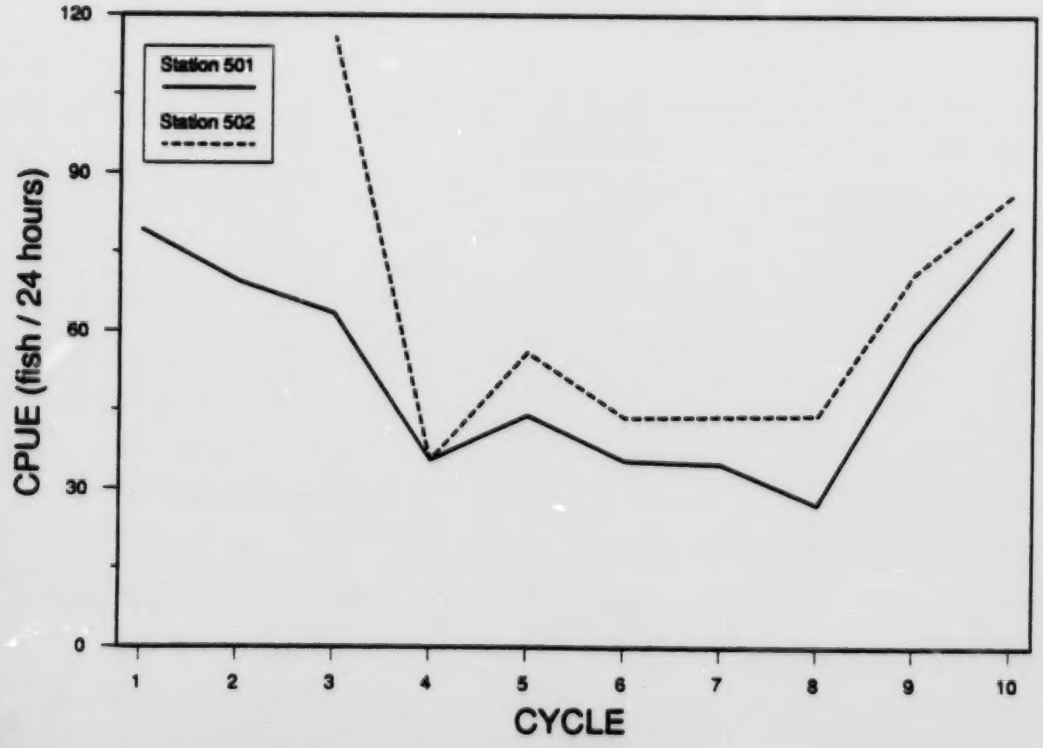

Fig. 16. Seasonal trends in CPUE for large least cisco at Wood Bay, 1989.

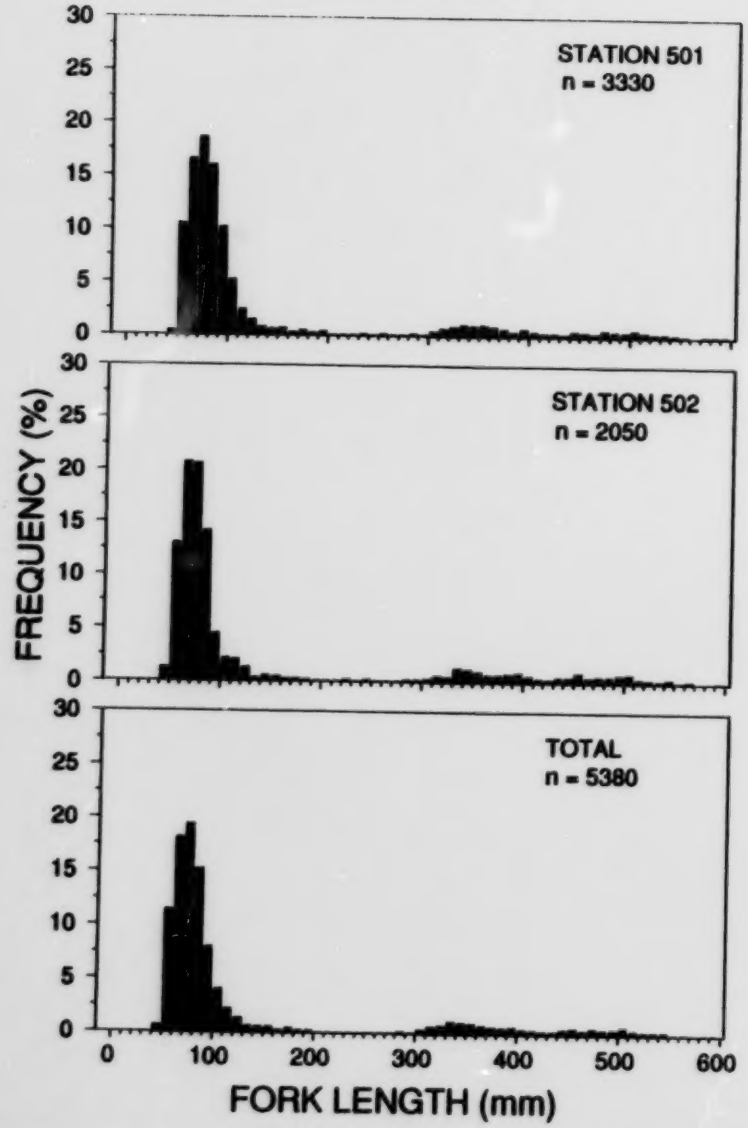

Fig. 17. Length-frequency distribution for broad whitefish captured in trap nets at Wood Bay, 1989.

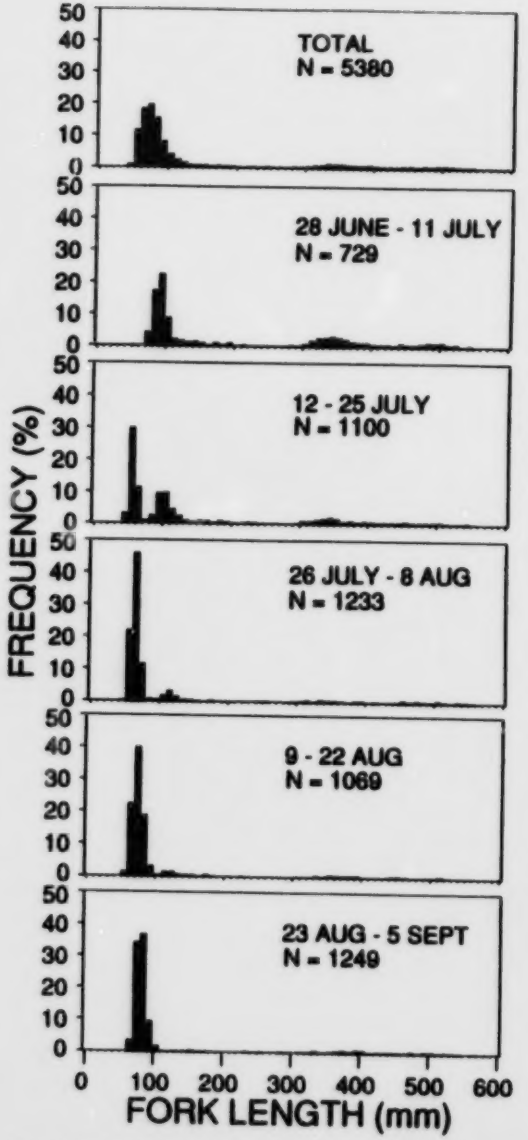

Fig. 18. Seasonal variation in length-frequency distribution of broad whitefish captured in trap nets at Wood Bay, 1989.

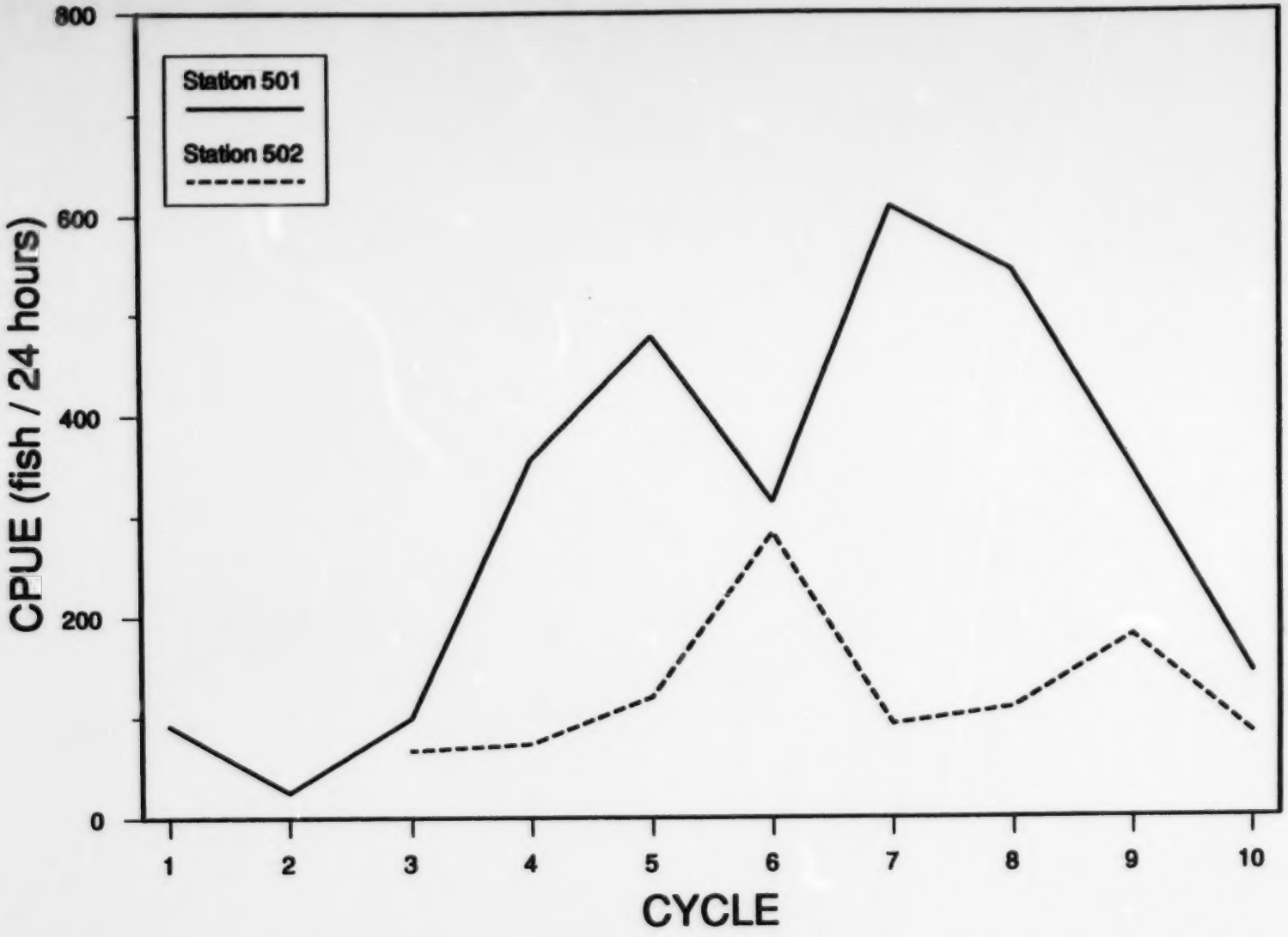

Fig. 19. Seasonal trends in CPUE for broad whitefish at Wood Bay, 1989.

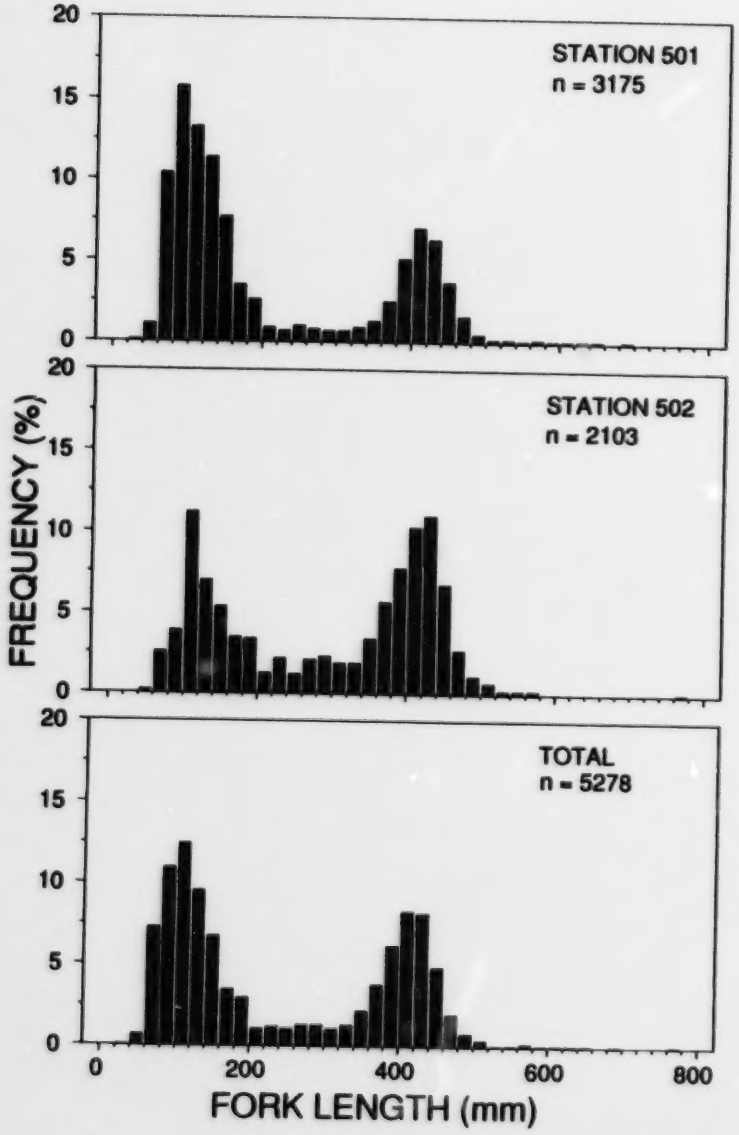

Fig. 20. Length-frequency distribution for lake whitefish captured in trap nets at Wood Bay, 1989.

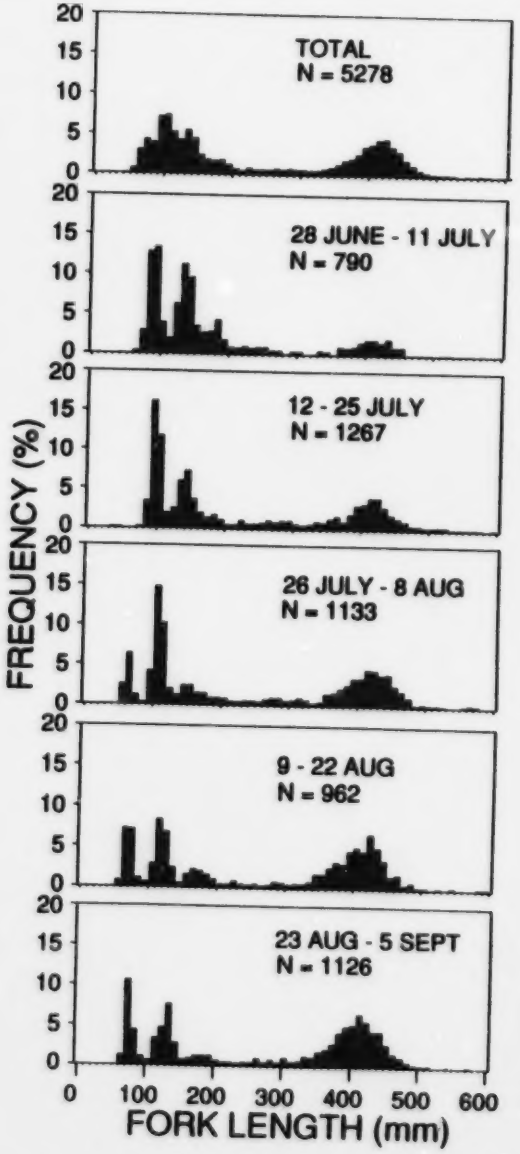

Fig. 21. Seasonal variation in length-frequency distribution of lake whitefish captured in trap nets at Wood Bay, 1989.

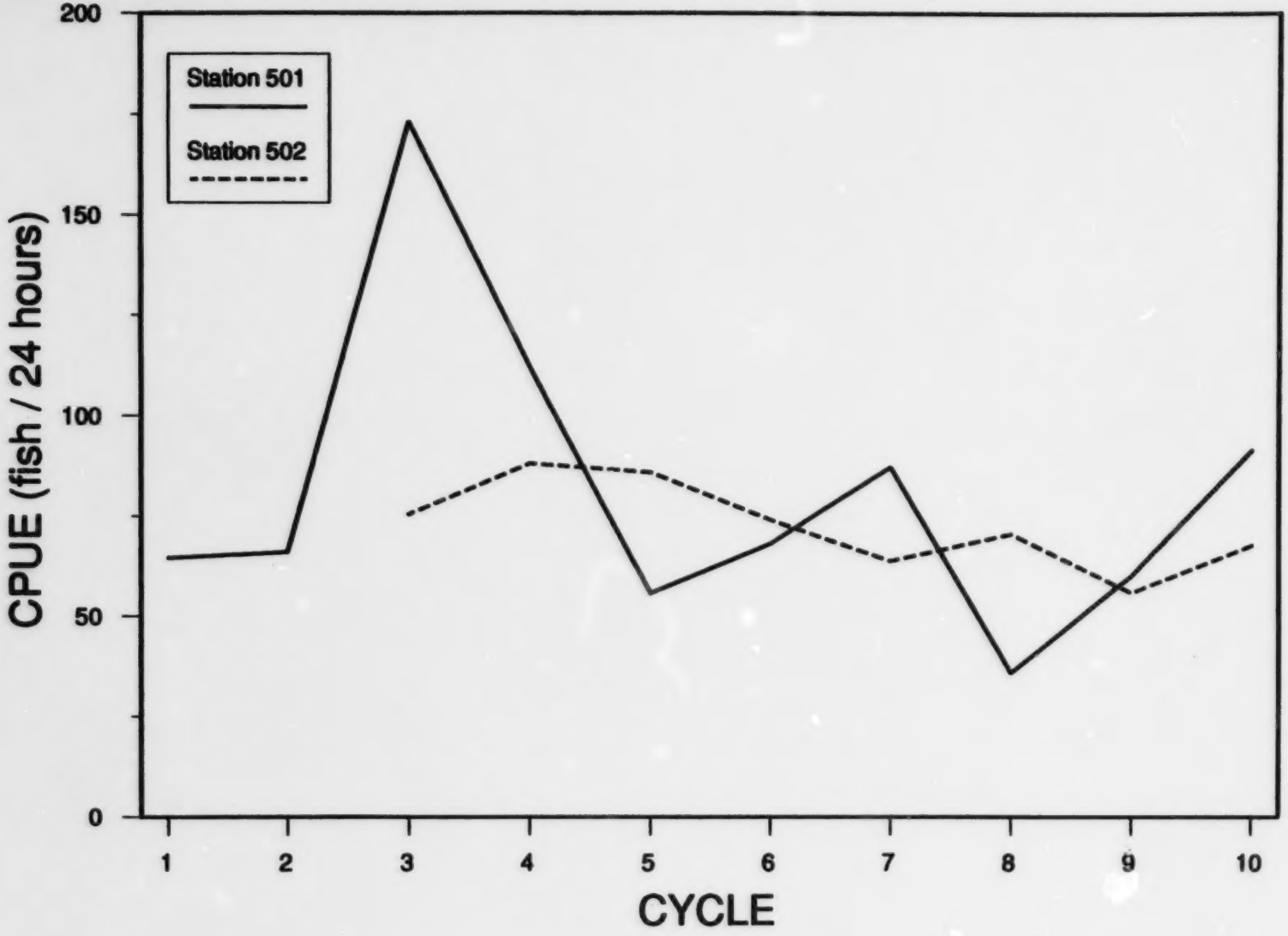

Fig. 22. Seasonal trends in CPUE for lake whitefish at Wood Bay, 1989.

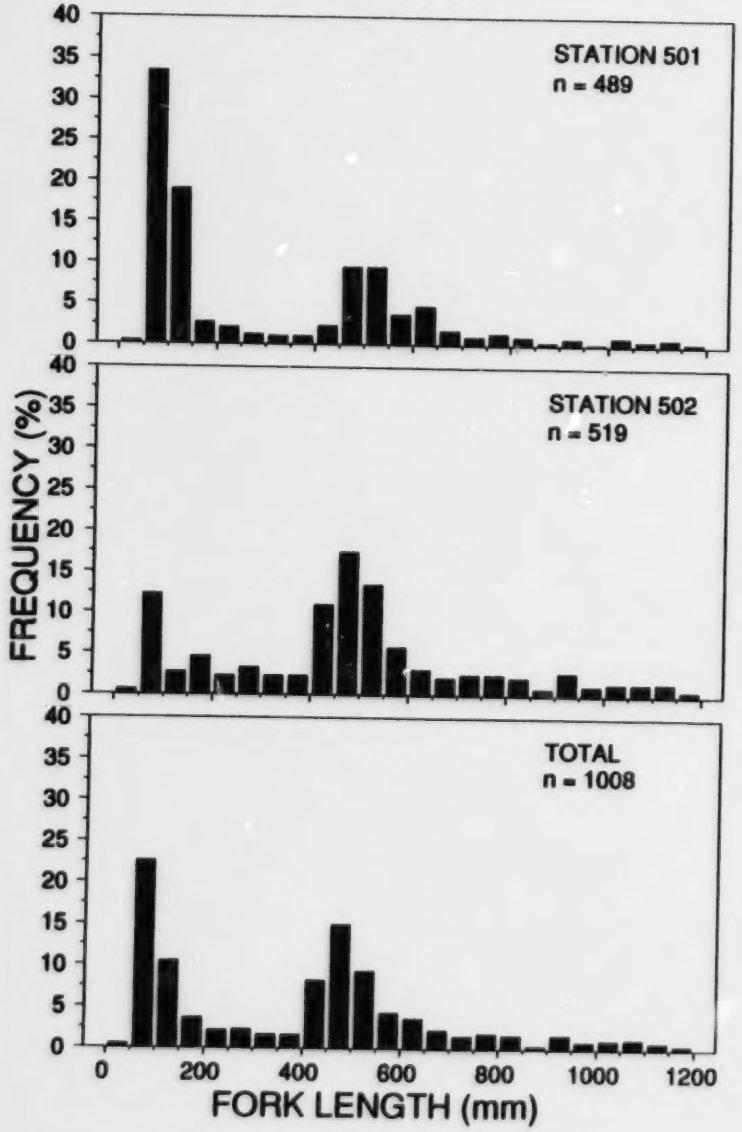

Fig. 23. Length-frequency distribution for inconnu captured in trap nets at Wood Bay, 1989.

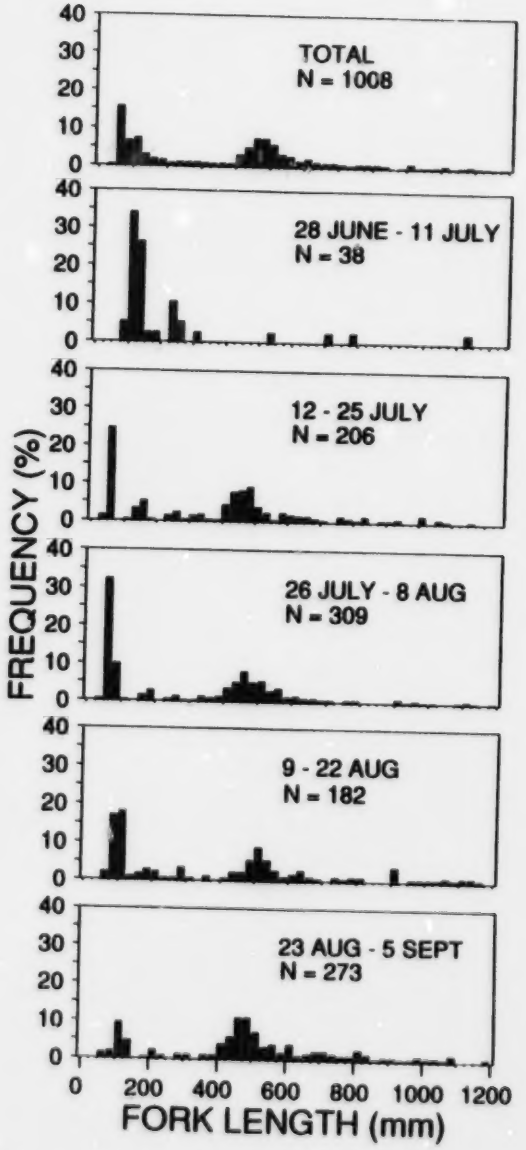

Fig. 24. Seasonal variation in length-frequency distribution of inconnu captured in trap nets at Wood Bay, 1989.

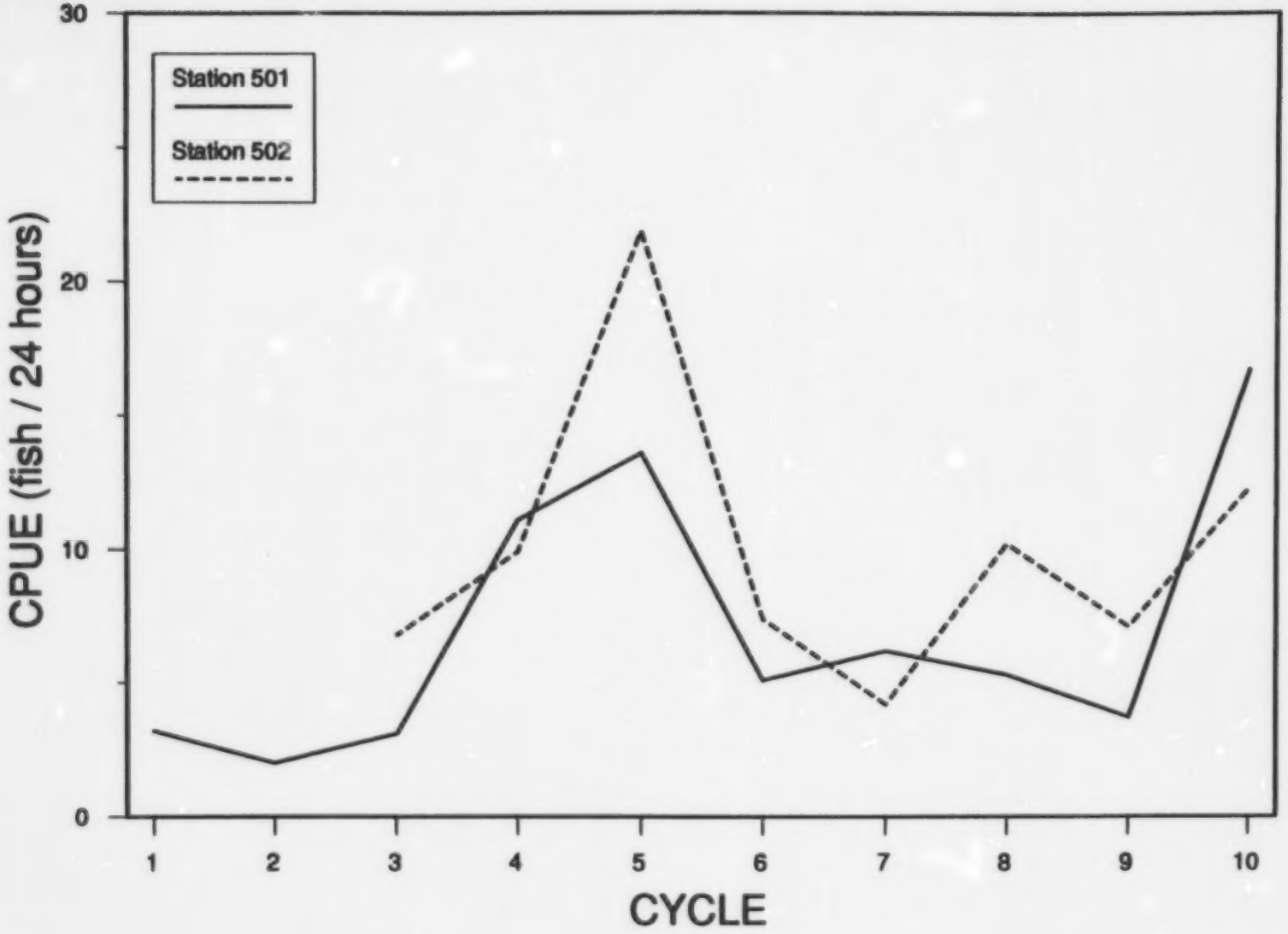

Fig. 25. Seasonal trends in CPUE for inconnu at Wood Bay, 1989.

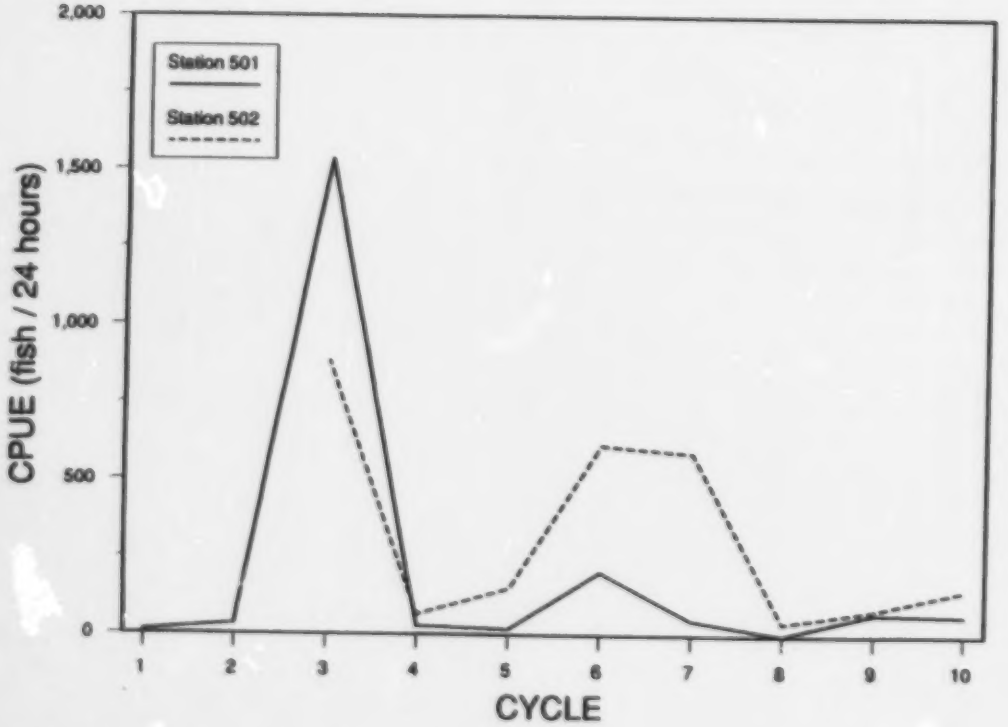

Fig. 26. Seasonal trends in CPUE for Arctic flounder at Wood Bay, 1989.

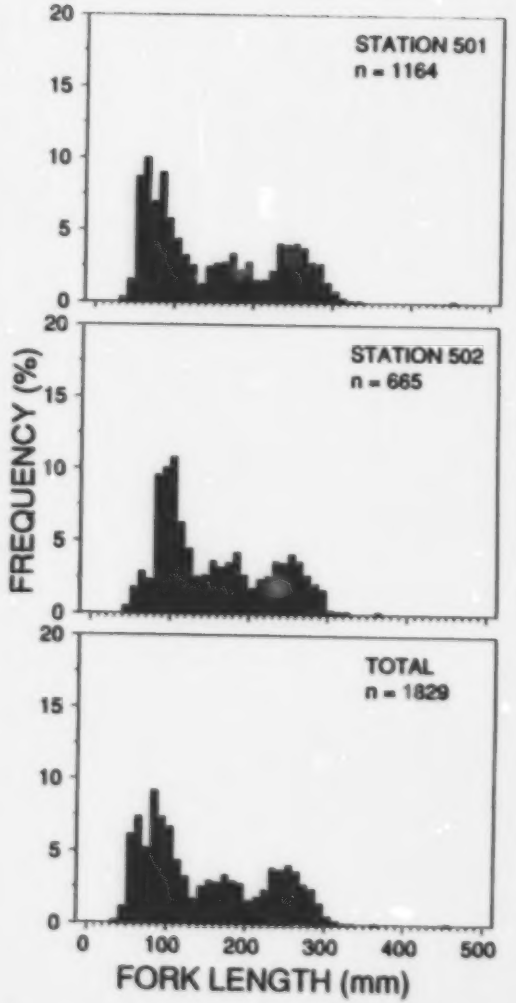

Fig. 27. Length-frequency distribution for Arctic flounder captured in trap nets at Wood Bay, 1989.

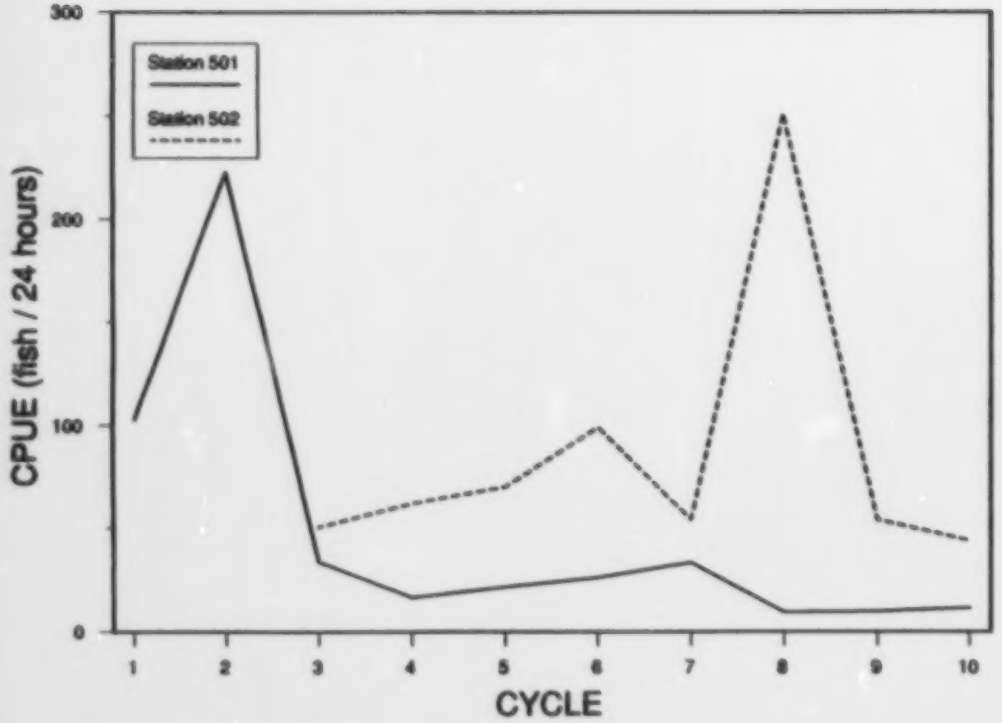

Fig. 28. Seasonal trends in CPUE for rainbow smelt at Wood Bay, 1989.

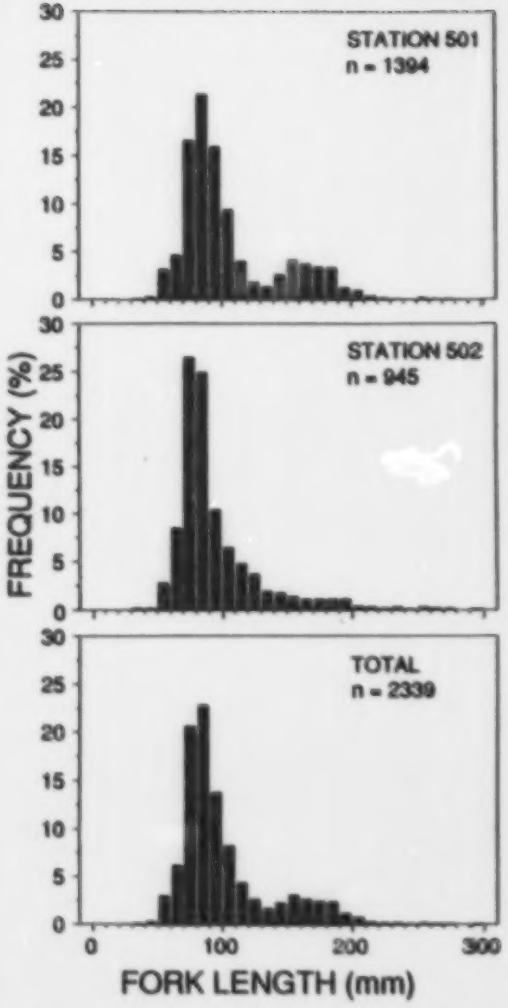

Fig. 29. Length-frequency distribution for rainbow smelt captured in trap nets at Wood Bay, 1989.

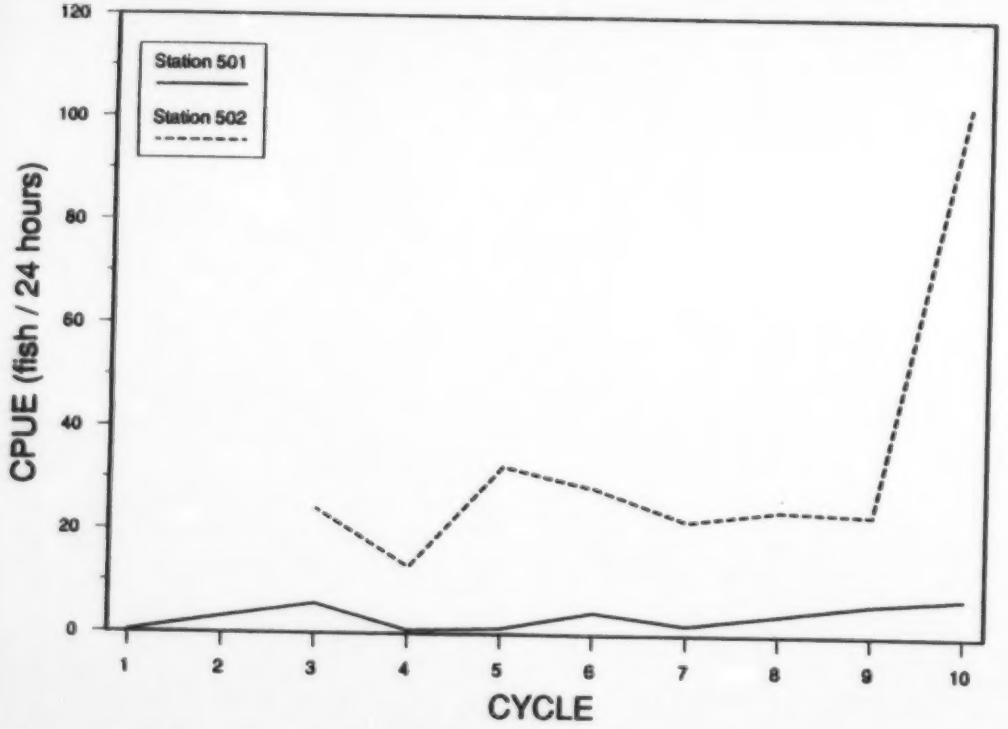

Fig. 30. Seasonal trends in CPUE for fourhorn sculpin at Wood Bay, 1989.

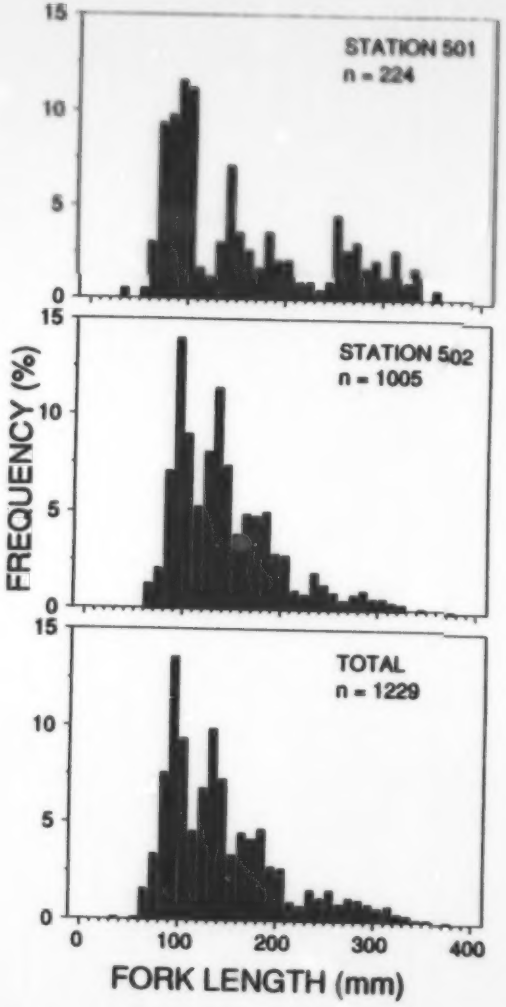

Fig. 31. Length-frequency distribution for fourhorn sculpin captured in trap nets at Wood Bay, 1989.

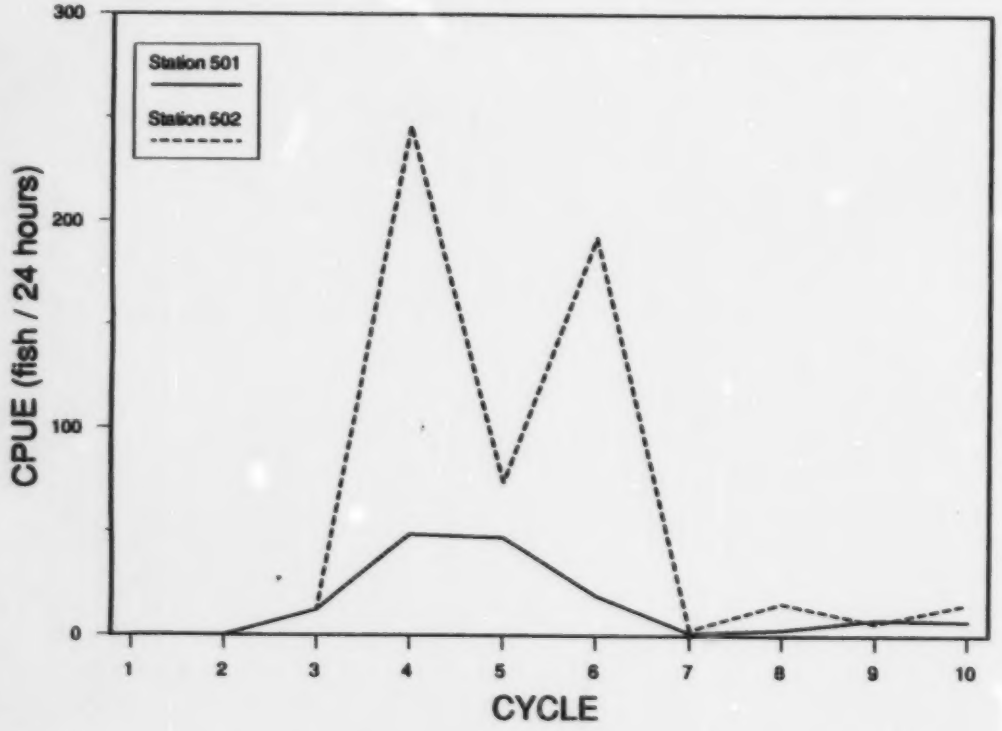

Fig. 32. Seasonal trends in CPUE for Pacific herring at Wood Bay, 1989.

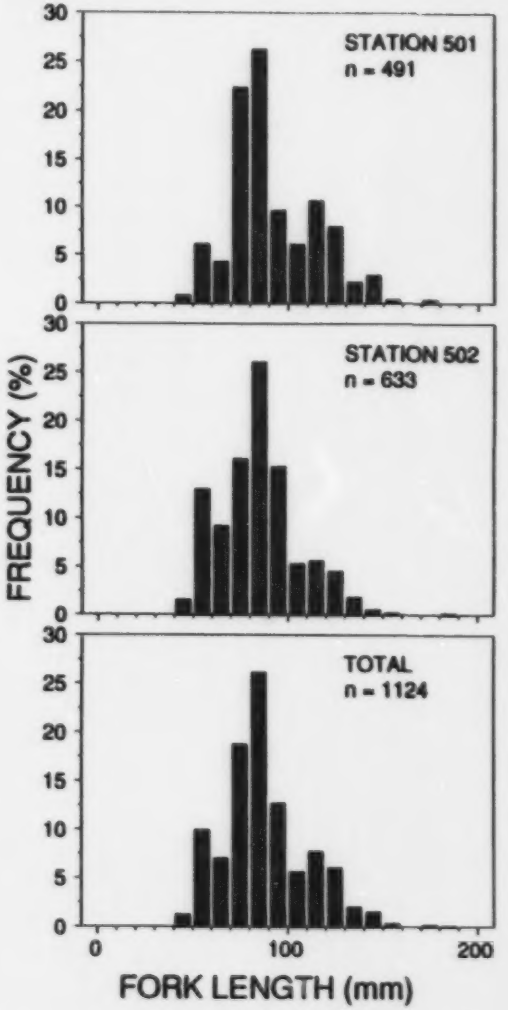

Fig. 33. Length-frequency distribution for Pacific herring captured in trap nets at Wood Bay, 1989.

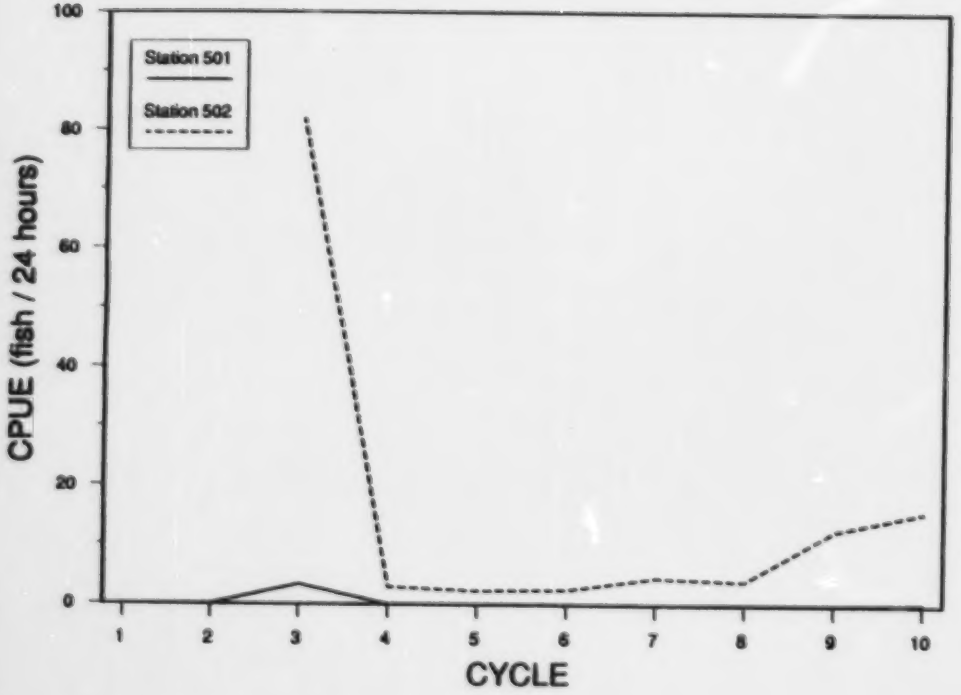

Fig. 34. Seasonal trends in CPUE for saffron cod at Wood Bay, 1989.

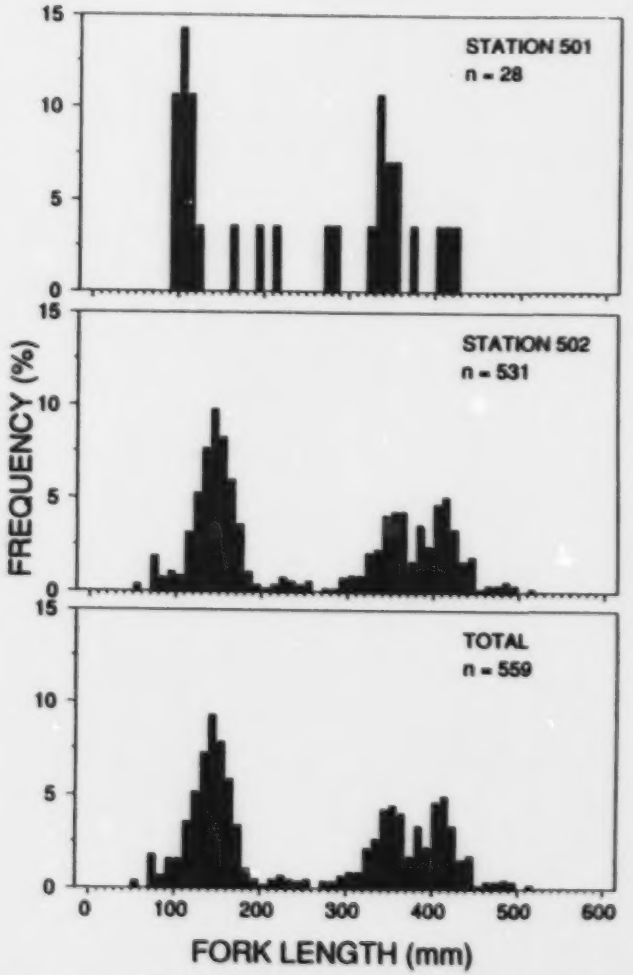

Fig. 35. Length-frequency distribution for saffron cod captured in trap nets at Wood Bay, 1989.

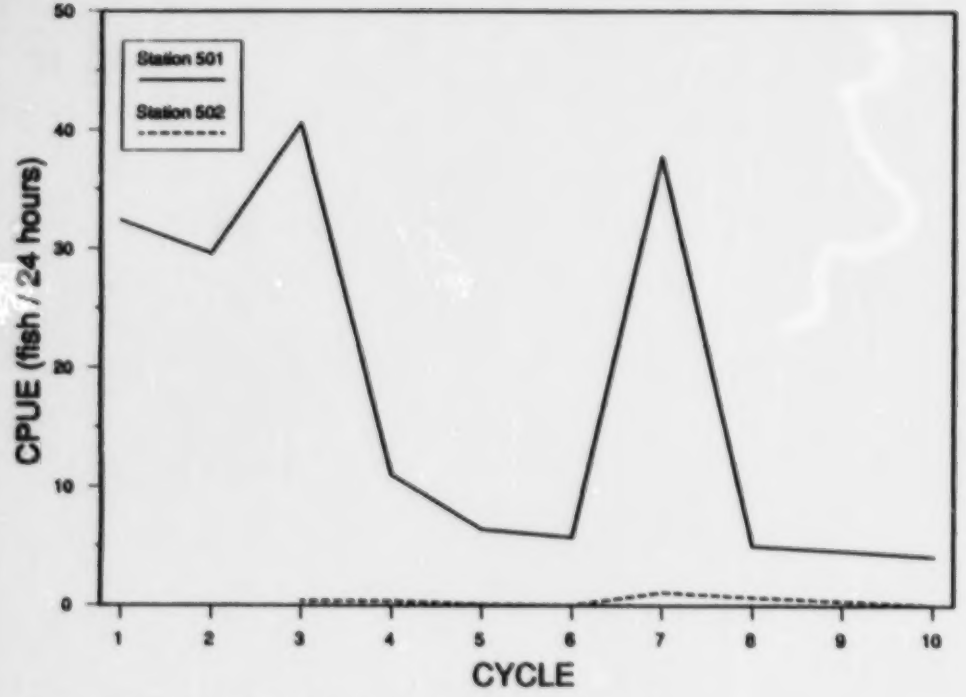

Fig. 36. Seasonal trends in CPUE for longnose sucker at Wood Bay, 1989.

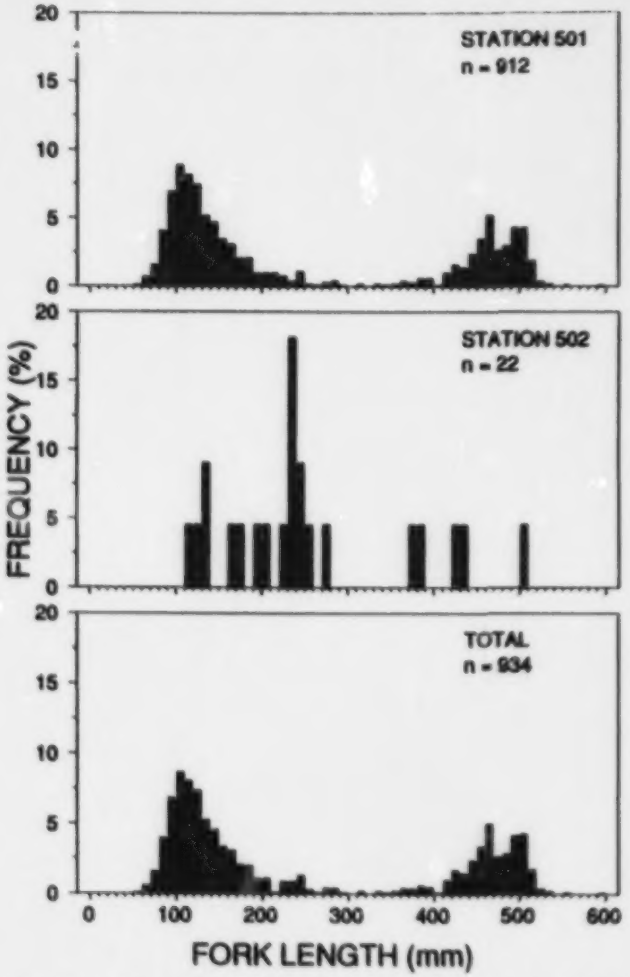

Fig. 37. Length-frequency distribution for longnose sucker captured in trap nets at Wood Bay, 1989.

Appendix A1. Water temperatures (°C) recorded at each trap net location by date and time of day, Wood Bay, 1989.

Date	Station 501						Station 502					
	0900	1000	1400	1900	2000	2400	0900	1000	1400	1900	2000	2400
29 June	15.0	-	17.0	16.5	-	16.0						
30	15.0	-	15.0	13.0	-	-						
1 July	8.0	-	11.5	12.0	-	11.0						
2	10.0	-	9.0	8.5	-	10.0						
3	8.0	-	-	11.0	-	12.5						
4	11.5	-	13.0	14.5	-	14.5						
5	12.0	-	13.0	15.0	-	15.0						
6	13.5	-	14.0	15.5	-	15.5						
7	15.0	-	15.0	15.0	-	14.0						
8	11.5	-	12.0	14.0	-	13.0						
9	12.0	-	-		-	13.0						
10	13.0	-	15.0	12.0	-	11.0						
11	16.5	-	15.5	16.5	-	16.0						
12	14.5	-	16.5	16.5	-	16.0						
13	17.0	-	-	19.0	-	17.5						
14	17.5	-	16.0	17.5	-	18.0	13.0	-	9.0	9.0	-	8.0
15	19.0	-	19.0	22.0	-	19.0	13.0	-	17.0	20.0	-	15.0
16	18.0	-	17.5	17.5	-	18.0	14.0	-	14.0	14.0	-	15.0
17	-	-	16.5	-	-	14.5	-	-	15.0	-	-	14.0
18	-	-	16.0	-	-	17.5			15.0			15.5
19	-	-	15.5	-	-	17.0			16.0			16.0
20	-	-	15.5	-	-	15.5			14.0			14.0
21	-	-		-	-	13.0						11.5
22	-	-	11.5	-	-	14.0			11.5			13.0
23	-	-	15.0	-	-	16.0			15.0			13.5
24	-	-	16.5	-	-	17.0			16.0			16.0
25	-	-	18.0	-	-	20.0			17.0			17.5
26	-	-	17.5	-	-	16.5			17.0			15.0
27	-	-	14.0	-	-	12.0			14.5			12.5
28	-	-	11.5	-	-	14.0			12.0			13.0
29	-	-	13.0	-	-	14.0			13.5			13.0
30	-	-	14.0	-	-	15.0			14.0			14.0
31	-	-	15.5	-	-	15.0			14.5			14.0
1 August	-	-	13.5	-	-	15.0			13.0			14.0
2	-	-	17.0	-	-	17.0			15.0			16.0
3	-	-	16.0	-	-	15.5			15.5			15.0
4	-	-	14.5	-	-	15.0			15.0			14.0
5	-	-	15.5	-	-	17.0			16.0			16.0
6	-	-	17.0	-	-	17.5			17.5			17.0
7	-	-	19.0	-	-	19.5			16.0			15.5
8	-	-	19.0	-	-	20.0			17.0			17.0
9	-	19.5	-	-	20.5	-		17.0			17.0	
10	-	18.5	-	-	19.5	-		17.5			20.0	
11	-	19.0	-	-	19.0	-		18.5			19.5	
12	-	18.0	-	-	21.0	-		18.0			20.0	
13	-	19.0	-	-	18.5	-		17.0			17.5	
14	-	16.0	-	-	17.0	-		15.0			16.5	
15	-	15.0	-	-	14.0			15.0				
16	-	13.0	-	-	13.0	-		12.5			13.5	
17	-	12.0	-	-	12.0	-		13.5			13.0	
18	-	9.0	-	-	12.0	-		10.0			12.5	
19	-	10.0	-	-	12.5	-		8.5			13.0	
20	-	11.0	-	-	11.5	-		11.0			11.5	
21	-	11.0	-	-	10.0	-					10.0	
22	-	9.5	-	-	11.0	-		9.5			11.0	
23	-	9.5	-	-	11.5	-		9.5			11.5	
24	-	10.5	-	-	14.0	-		10.5			12.0	
25	-	12.5	-	-	14.0	-		11.5			13.5	
26	-	12.5	-	-	14.5	-		12.0			14.5	
27	-	12.0	-	-	14.0	-		12.0			14.0	
28	-	12.5	-	-	13.5	-		12.0			13.5	
29	-	11.5	-	-	14.0	-		11.5			12.5	
30	-	12.5	-	-	14.0	-		11.5			12.0	
31	-	13.5	-	-	13.5	-		12.0			13.0	
1 September	-	12.0	-	-	12.5	-		12.0			11.5	
2	-	12.0	-	-	12.5	-		10.5			10.0	
3	-	10.0	-	-	10.0	-		8.5			9.0	
4	-	10.0	-	-	9.5	-		8.0			9.0	
5	-	9.0	-	-	11.0	-		9.0			11.0	

Appendix A2. Salinity values ($g \cdot kg^{-1}$) recorded at each trap net location by date and time of day, Wood Bay, 1989.

Date	Station 501						Station 502					
	0900	1000	1400	1900	2000	2400	0900	1000	1400	1900	2000	2400
29 June	0.0		0.0	0.0		0.0						
30	0.0		0.0	0.0								
1 July			0.0	0.0		0.0						
2	0.0		0.0	0.0		0.0						
3	0.0		0.0	0.0		0.0						
4	0.0		0.0	0.1		0.1						
5	0.0		0.1	0.0		0.1						
6	0.0		0.0	0.0		0.0						
7	0.0		0.0	0.0		0.0						
8	0.0		0.1	0.0		0.0						
9	0.0					0.0						
10	0.0		0.0	0.0		0.0						
11	0.0		0.0	0.1		0.0						
12	0.0		0.0	0.0		1.1						
13	0.6			0.8		2.1						
14	0.9		6.7	6.1		5.0	6.5	-	11.5	11.6	-	10.5
15	3.2		4.8	2.7		3.3	8.9		7.4	6.3		8.0
16	3.5		3.2	4.0		2.5	8.2		8.0	8.0		6.9
17			1.0			1.0			5.7			2.0
18			0.4			0.1			1.3			0.8
19						0.5						2.2
20			0.9			1.0			6.0			7.0
21						1.6						6.8
22			1.6			1.4			8.3			7.8
23			1.5			2.0			4.2			5.5
24			1.3			1.8			5.7			6.3
25			1.5			1.3			5.2			5.6
26			1.0			1.0			2.8			4.4
27			1.0			1.0			3.8			3.4
28			1.0			0.3			1.2			3.5
29			1.0			1.0			4.3			4.3
30			3.2			3.0			6.3			6.0
31			3.5			3.2			6.2			5.8
1 August			3.0			3.5			6.3			6.2
2						4.3						7.9
3			3.1			2.2			6.2			4.3
4			1.7			1.8			4.0			4.7
5			1.6			2.8			4.4			4.9
6			1.4			2.2			4.2			5.3
7			2.0			3.6			4.4			7.3
8			3.0			3.7			7.7			7.6
9		3.1			4.0		-	10.1	-	-	8.2	-
10		7.5			4.7			8.0			6.9	
11		3.3			2.5			8.0			6.2	
12		1.8			1.7			5.7			4.9	
13		1.9			2.0			7.9			7.3	
14		2.8			3.8			7.4			7.3	
15		3.3			4.0			6.0				
16		3.7			3.5			4.2			4.9	
17		3.7			3.8			6.2			7.1	
18		4.1			4.2			7.3			8.2	
19		6.1			3.6			8.6			8.9	
20		7.0			6.8			8.4			8.4	
21		6.0			5.4						7.3	
22		4.7			3.8			7.9			8.0	
23		5.1			4.1			9.8			8.7	
24		3.8			3.8			7.9			8.7	
25		4.8			3.4			9.8			8.3	
26		2.8			2.8			9.0			9.2	
27		3.8			4.3			9.8			8.2	
28		4.2			6.3			9.3			9.2	
29		5.4			8.5			11.0			12.3	
30		6.0			7.3			12.5			11.2	
31		6.1			7.2			10.1			9.1	
1 September		5.3			4.3			10.3			10.4	
2		5.0			5.6			12.2			13.2	
3		8.2			5.4			13.9			12.0	
4		4.6			5.3			13.8			12.3	
5		6.3			6.9			12.0			10.8	

Appendix A3.1. Daily catch of large (≥150mm) Arctic cisco by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1] Station 501 01	02	Total	Station 502 01	02	Total	Grand Total
28 June	2	5	7			0	7
29	8	4	12			0	12
30	6	4	10			0	10
01 July	2	1	3			0	3
02			0			0	0
03	2	6	8			0	8
04	6	4	10			0	10
05	1	3	4			0	4
06	6	4	10			0	10
07	6	1	7			0	7
08		3	3			0	3
09		1	1			0	1
10	3	3	6			0	6
11		1	1			0	1
12	1		1			0	1
13	1		1			0	1
14	1		1	4	4	8	9
15		5	5	18	6	24	29
16	5	1	6	7	16	23	29
17		3	3	1	2	3	6
18	2	1	3	16	15	31	34
19	1		1	17	5	22	23
20	1		1	85	32	117	118
21	3	8	11	29	29	58	69
22	12	33	45	64	82	146	191
23	3	4	7	13	15	28	35
24	3	1	4	14	5	19	23
25	1		1	4	1	5	6
26			0	8	8	16	16
27	2	5	7	5	35	40	47
28	1	1	2	11	17	28	30
29		2	2	12	3	15	17
30	1		1	5	6	11	12
31	1	5	6	6	25	31	37
01 August	1	1	2	20	26	46	48
02	2		2	8	1	9	11
03	1		1	5	7	12	13
04	1	3	4	6	14	20	24
05			0	1		1	1
06		1	1	7	2	9	10
07			0	2	1	3	3
08			0	1		1	1
09	1		1		2	2	3
10		1	1	1		1	2
11		2	2	6		6	8
12			0	2	2	4	4
13			0	8	13	21	21
14	1		1	11	13	24	25
15			0			0	0
16	1	10	11	11	57	68	79
17		5	5	8	30	38	43
18	1		1	2	22	24	25
19	3		3	1	5	6	9
20			0		1	1	1
21	1	4	5	7	52	59	64
22	4	11	15	20	69	89	104
23	6	3	9	8	25	33	42
24	1	9	10	9	7	16	26
25	2	3	5	1	4	5	10
26	4	2	6	10	29	39	45
27			0	5	10	15	15
28	7	12	19	14	95	109	128
29	3	9	12	14	159	173	185
30	5	31	36	11	75	86	122
31	3	4	7	3	26	29	36
01 September	4	11	15	10	14	24	39
02	14	7	21	13	57	70	91
03	15	33	48	26	96	122	170
04	26	55	81	11	86	97	178
05	9	16	25	20	70	90	115
Total	197	342	539	601	1376	1977	2516

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.2. Daily catch of small (<150mm) Arctic cisco by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1] Station 501 01	02	Total	Station 502 01	02	Total	Grand Total
28 June	205	274	479			0	479
29	259	317	576			0	576
30	154	107	261			0	261
01 July	43	32	75			0	75
02	39	23	62			0	62
03	222	293	515			0	515
04	494	241	735			0	735
05	206	111	317			0	317
06	204	81	285			0	285
07	208	103	311			0	311
08	87	38	125			0	125
09	97	74	171			0	171
10	138	122	260			0	260
11	26	36	62			0	62
12	39	90	129			0	129
13	39	121	160			0	160
14	18	52	70	56	51	107	177
15	9	22	31	321	46	367	398
16	42	56	98	7	1	8	106
17	4	4	8	1		1	9
18	2	3	5	8		8	13
19	5	8	13	10	2	12	25
20	4		4	6	2	8	12
21			0	1		1	1
22			0	2	1	3	3
23	5	26	31	19	9	28	59
24	19	17	36	25	5	30	66
25	15	13	28	56	25	81	109
26	43	11	54	19	4	23	77
27	7	1	8	4		4	12
28	9	3	12	1	1	2	14
29	7	16	23	6	34	40	63
30	25	220	245	20	221	241	486
31	28	29	57	9	6	15	72
01 August	17	27	44	93	36	129	173
02	70	14	84	206	58	264	348
03	7	8	15	39	10	49	64
04	31	3	34	23	78	101	135
05	20	19	39	27	34	61	100
06	25	17	42	20	32	52	94
07	27	20	47	48	13	61	108
08	18	8	26	21	3	24	50
09	48	12	60	4	1	5	65
10	15	21	36	1	7	8	44
11	11	17	28	21	27	48	76
12	7	17	24	23	1	24	48
13	4	7	11	8	2	10	21
14		1	1	5		5	6
15			0			0	0
16		2	2	1		1	3
17	4	2	6	1	2	3	9
18	1		1		1	1	2
19	1	1	2	6	16	22	24
20	13	6	19	5	9	14	33
21	10	1	11	2		2	13
22	2	2	4	18	5	23	27
23	3	7	10		2	2	12
24	5	8	13	5	52	57	70
25	6	1	7	5	29	34	41
26	10	13	23		10	10	33
27	14	8	22	2		2	24
28	5	6	11	1	1	2	13
29	24	2	26			0	26
30	8		8	6	1	7	15
31	5	2	7	2	6	8	15
01 September	6		6	10	1	11	17
02	4	2	6	2		2	8
03	5		5	1	2	3	8
04			0		2	2	2
05		13	13	3	7	10	23
Total	3128	2811	5939	1180	856	2036	7975

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.3. Daily catch of large (≥150mm) least cisco by codend trap, Mood Bay, 1989.

Date	Number of station and side of trap[1] Station 501 01	501 02	501 Total	Station 502 01	502 02	502 Total	Grand Total
28 June	10	27	37			0	37
29	10	31	41			0	41
30	48	21	69			0	69
01 July	7	38	45			0	45
02	13	30	43			0	43
03	32	230	262			0	262
04	13	56	69			0	69
05	10	18	28			0	28
06	14	17	31			0	31
07	29	24	53			0	53
08	20	66	86			0	86
09	31	131	162			0	162
10	22	87	109			0	109
11	8	9	17			0	17
12	7	57	64			0	64
13	13	54	67			0	67
14	1	27	28	91	76	167	195
15	18	110	128	213	36	249	377
16	29	43	72	63	48	111	183
17	13	24	37	25	8	33	70
18	27	20	47	13	6	19	66
19	7	33	40	17	7	24	64
20	8	23	31	33	15	48	79
21	2	7	9	6	12	18	27
22	11	18	29	18	21	39	68
23	11	57	68	14	9	23	91
24	9	40	49	23	10	33	82
25	14	8	22	38	25	63	85
26	6	18	24	24	8	32	56
27	6	6	12	4	4	8	20
28	6	13	19	9	10	19	38
29	10	39	49	51	51	102	151
30	25	103	128	31	88	119	247
31	5	44	49	6	24	30	79
01 August	4	24	28	29	53	82	110
02	8	47	55	37	41	78	133
03	1	8	9	3	6	9	18
04	7	29	36	9	15	24	60
05	3	13	16	16	3	19	35
06	14	9	23	27	13	40	63
07	1	32	33	23	34	57	90
08	2	73	75	36	42	78	153
09	7	50	57	9	36	45	102
10	1	34	35	9	12	21	56
11	5	37	42	23	17	40	82
12	6	26	32	17	5	22	54
13		20	20	16	20	36	56
14	11	30	41	22	68	90	131
15	8	2	10	18	9	27	37
16	1	33	34	9	27	36	70
17	17	13	30	5	37	42	72
18	1	9	10	2	29	31	41
19	4	11	15	7	22	29	44
20	14	12	26	6	10	16	42
21	19	4	23	13	42	55	78
22	20	31	51	11	107	118	169
23	35	27	62	9	51	60	122
24	31	60	91	9	24	33	124
25	11	25	36	25	40	65	101
26	9	18	27	6	64	70	97
27	10	46	56	28	52	80	136
28	15	70	85	12	105	117	202
29	16	33	49	5	68	73	122
30	27	49	76	12	39	51	127
31	24	63	87	11	16	27	114
01 September	19	35	54	16	28	44	98
02	19	49	68	25	36	61	129
03	14	47	61	9	135	144	205
04	28	92	120	8	153	161	281
05	24	70	94	12	102	114	208
Total	931	2760	3691	1213	2019	3232	6923

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.4. Daily catch of small (<150mm) least cisco by codend trap, Mood Bay, 1989.

Date	Number by station and side of trap[1] Station 501 01	501 02	501 Total	Station 502 01	502 02	502 Total	Grand Total
28 June	801	768	1569			0	1569
29	746	1108	1854			0	1854
30	574	472	1046			0	1046
01 July	98	191	289			0	289
02	233	188	421			0	421
03	842	1777	2619			0	2619
04	1084	967	2051			0	2051
05	314	180	494			0	494
06	766	284	1050			0	1050
07	597	111	708			0	708
08	1186	386	1572			0	1572
09	1020	1183	2203			0	2203
10	685	2757	3442			0	3442
11	166	1168	1334			0	1334
12	109	1250	1359			0	1359
13	278	1717	1995			0	1995
14	75	877	952	233	137	370	1322
15	154	114	268	845	104	949	1217
16	1565	741	2306	70	25	95	2401
17	221	311	532	16	35	51	583
18	244	116	360	89	6	95	455
19	109	259	368	44	12	56	424
20	42	50	92	12	12	24	116
21	7	1	8	9	5	14	22
22	16	9	25	12	14	26	51
23	52	183	235	34	52	86	321
24	48	177	225	33	14	47	272
25	68	58	126	228	92	320	446
26	72	50	122	67	24	91	213
27	44	11	55	17		17	72
28	88	54	142	7	3	10	152
29	85	322	407	37	388	425	832
30	289	1040	1329	25	946	971	2300
31	84	299	383	14	18	32	415
01 August	30	130	160	148	107	255	415
02	377	172	549	528	210	738	1287
03	65	34	99	84	32	116	215
04	101	35	136	72	395	467	603
05	341	349	690	169	390	559	1249
06	457	521	978	80	153	233	1211
07	1219	259	1478	617	44	661	2139
08	350	139	489	229	49	278	767
09	371	200	571	9	10	19	590
10	109	237	346	14	15	29	375
11	490	603	1093	937	877	1814	2907
12	233	437	670	1427	18	1445	2115
13	31	111	142	35	6	41	183
14	26	109	135	21	8	29	164
15	5	11	16	2	1	3	19
16	52	73	125	7	10	17	142
17	16	61	77	10	4	14	91
18	30	65	95		1	1	96
19	39	46	85	23	46	69	154
20	115	125	240	12	14	26	266
21	73	14	87	9	10	19	106
22	58	59	117	38	57	95	212
23	131	272	403	12	8	20	423
24	30	133	163	11	1110	1121	1284
25	112	133	245	18	152	170	415
26	306	268	574	1	20	21	595
27	441	149	590	8	2	10	600
28	218	55	273	8	7	15	288
29	820	163	983	16	3	19	1002
30	941	842	1783	6	122	128	1911
31	957	845	1802	7	131	138	1940
01-Sep	923	903	1826	15	22	37	1863
02	567	381	948	8	8	16	964
03	71	58	129	2	3	5	134
04	37	44	81	20	3	23	104
05	270	1962	2232	19	326	345	257
Total	23174	29177	52351	6414	6261	12675	65026

[1] Side 01 refers to the Anderson River side of the load

Appendix A3.5 Daily catch of broad whitefish by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June	16	58	74			0	74
29	33	117	150			0	150
30	46	88	134			0	134
01 July	21	64	85			0	85
02	18	27	45			0	45
03	13	93	106			0	106
04	17	44	61			0	61
05	4	14	18			0	18
06	5	14	19			0	19
07	9	8	17			0	17
08	6	11	17			0	17
09	12	27	39			0	39
10	5	47	52			0	52
11	5	8	13			0	13
12	16	51	67			0	67
13	38	19	57			0	57
14	15	23	38	77	15	92	130
15	44	61	105	77	12	89	194
16	190	42	232	19	31	50	282
17	69	17	86	12	8	20	106
18	73	35	108	68	13	81	189
19	81	59	140	38	24	62	202
20	69	29	98	27	14	41	139
21	15	2	17	8	12	20	37
22	28	32	60	7	8	15	75
23	235	217	452	13	43	56	508
24	177	755	932	59	20	79	1011
25	298	494	792	215	24	239	1031
26	188	93	281	109	29	138	419
27	57	33	90	31	15	46	136
28	153	214	367	25	13	38	405
29	161	190	351	36	94	130	481
30	131	897	1028	47	163	210	1238
31	584	293	877	49	14	63	940
01 August	113	241	354	189	24	213	567
02	421	238	659	154	30	184	843
03	49	78	127	44	15	59	186
04	132	81	213	10	27	37	250
05	223	166	389	81	11	92	481
06	94	140	234	548	14	562	796
07	219	99	318	793	20	813	1131
08	156	100	256	210	22	232	488
09	237	196	433	24	9	33	466
10	135	270	405	40	22	62	467
11	230	1258	1488	38	170	208	1696
12	248	715	963	120	18	138	1101
13	69	348	417	52	8	60	477
14	143	256	399	70	7	77	476
15	21	25	46	7	7	14	60
16	48	212	260	17	14	31	291
17	164	659	823	35	25	60	883
18	26	875	901	13	29	42	943
19	115	366	481	11	293	304	785
20	350	776	1126	29	257	286	1412
21	90	28	118	6	32	38	156
22	47	54	101	11	38	49	150
23	71	391	462	20	67	87	549
24	23	253	276	4	564	568	844
25	33	139	172	3	338	341	513
26	189	463	652	19	64	83	735
27	196	290	486	47	15	62	548
28	82	69	151	42	23	65	216
29	139	90	229	36	18	54	283
30	191	86	277	82	85	167	444
31	66	112	178	2	96	98	276
01 September	92	102	194	26	40	66	260
02	29	104	133	60	39	99	232
03	23	54	77	22	34	56	133
04	14	22	36	12	36	48	84
05	26	82	108	13	30	43	151
Total	7336	13614	20950	3807	3093	6900	27850

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.6. Daily catch of lake whitefish by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June	71	47	118			0	118
29	53	48	101			0	101
30	33	43	76			0	76
01 July	13	20	33			0	33
02	20	8	28			0	28
03	20	26	46			0	46
04	34	26	60			0	60
05	43	19	62			0	62
06	44	11	55			0	55
07	63	15	78			0	78
08	23	20	43			0	43
09	38	65	103			0	103
10	33	40	73			0	73
11	33	15	48			0	48
12	50	90	140			0	140
13	60	26	86			0	86
14	37	23	60	87	33	120	180
15	91	119	210	47	29	76	286
16	341	91	432	38	41	79	511
17	75	45	120	26	13	39	159
18	145	20	165	43	20	63	228
19	215	45	260	168	37	205	465
20	155	46	201	55	54	109	310
21	36	24	60	11	30	41	101
22	53	35	88	18	17	35	123
23	24	48	72	10	12	22	94
24	14	35	49	37	15	52	101
25	20	35	55	123	30	153	208
26	42	49	91	78	31	109	200
27	26	37	63	25	27	52	115
28	30	21	51	26	22	48	99
29	18	29	47	45	34	79	126
30	11	11	22	26	15	41	63
31	38	41	79	33	30	63	142
01 August	21	16	37	131	78	209	246
02	26	35	61	100	42	142	203
03	17	23	40	37	28	65	105
04	77	37	114	22	12	34	148
05	26	46	72	23	12	35	107
06	38	12	50	62	11	73	123
07	26	25	51	91	19	110	161
08	47	42	89	38	20	58	147
09	106	49	155	12	39	51	206
10	46	73	119	12	23	35	154
11	47	84	131	28	19	47	178
12	38	32	70	17	41	58	128
13	16	34	50	5	41	46	96
14	23	28	51	54	64	118	169
15	17	2	19	10	43	53	72
16	10	38	48	26	54	80	128
17	10	8	18	21	48	69	87
18	3	6	9		32	32	41
19	8	22	30		15	15	45
20	22	22	44	9	26	35	79
21	21	13	34	36	155	191	225
22	38	30	68	44	56	100	168
23	28	27	55	16	32	48	103
24	24	55	79	13	39	52	131
25	13	10	23	12	43	55	78
26	17	24	41	10	59	69	110
27	25	18	43	13	52	65	108
28	16	42	58	6	47	53	111
29	57	65	122	4	45	49	171
30	41	50	91	25	3	28	119
31	78	63	141	11	96	107	248
01 September	41	62	103	21	62	83	186
02	20	56	76	15	42	57	133
03	32	64	96	6	64	70	166
04	16	53	69	15	59	74	143
05	8	56	64	8	46	54	118
Total	3101	2595	5696	1849	2057	3906	9602

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.7. Daily catch of inconnu by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June	1	9	10			0	10
29	3	2	5			0	5
30	3	1	4			0	4
01 July	3	1	4			0	4
02			0			0	0
03			0			0	0
04			0			0	0
05	1		1			0	1
06		1	1			0	1
07	3	3	6			0	6
08	2	2	4			0	4
09			0			0	0
10		1	1			0	1
11		1	1			0	1
12		1	1			0	1
13		1	1			0	1
14		2	2	2	1	3	5
15	2	2	4		1	1	5
16	1	1	2		11	11	13
17	3	4	7	2	4	6	13
18	2	3	5	8	5	13	18
19	4	1	5	2	10	12	17
20	6	7	13	3	16	19	32
21	1	21	22	2	5	7	29
22	3	14	17	2	3	5	22
23	8	5	13	7	6	13	26
24	2	2	4	2	3	5	9
25	1	3	4	2	6	8	12
26	8	8	16	3	49	52	68
27	9	10	19		23	23	42
28	3	5	8	9	17	26	34
29	6	10	16	4	15	19	35
30	8	7	15	1	10	11	26
31	11	5	16	4	8	12	28
01 August		5	5	7	3	10	15
02	4	3	7	3	3	6	13
03	4	4	8	7	15	22	30
04	4	4	8	4	5	9	17
05	1		1	2	2	4	5
06	1	1	2	6	1	7	9
07	3	2	5	1		1	6
08	5		5	1	2	3	8
09	11	3	14	3	2	5	19
10	4	4	8		2	2	10
11	3		3	1	2	3	6
12	3	2	5	1	4	5	10
13	6	1	7		1	1	8
14	3	2	5	2	8	10	15
15			0	1		1	1
16		1	1	3	10	13	14
17			0		12	12	12
18	1		1		4	4	5
19	10	7	17	1	2	3	20
20	3	1	4		2	2	6
21	3	3	6	2	18	20	26
22	6	2	8	6	16	22	30
23	1	4	5	1	9	10	15
24		4	4		7	7	11
25		3	3	1	4	5	8
26		1	1	3	4	7	8
27	2		2		2	2	4
28	4	2	6	4	8	12	18
29	3	2	5	1	6	7	12
30	3	3	6	1	5	6	12
31	3	11	14	2	28	30	44
01 September	4	6	10	4	3	7	17
02	5	5	10	2	11	13	23
03	2	19	21	3	3	6	27
04	15	17	32		2	2	34
05	4	20	24	13	9	22	46
Total	215	275	490	139	408	547	1037

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.8 Daily catch of Arctic flounder by codend trap, Wood Bay, 1989.

Date	Number by station and side of traps[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June	9	7	16			0	16
29	3	3	6			0	6
30	32		32			0	32
01 July			0			0	0
02			0			0	0
03	4		4			0	4
04	8	6	14			0	14
05	35	26	61			0	61
06	37	11	48			0	48
07	33	16	49			0	49
08	6	9	15			0	15
09	7	1	8			0	8
10	15	3	18			0	18
11	25	2	27			0	27
12	57	79	136			0	136
13	1803	3290	5093			0	5093
14	1179	1840	3019	126	2763	2889	5908
15	909	1019	1928	303	929	1232	3160
16	174	80	254	216	33	249	503
17	72	3	75	19	2	21	96
18	246	9	255	7	2	9	264
19	108	6	114	6	9	15	129
20	26	3	29	37	7	44	73
21	1	2	3	10	2	12	15
22	2		2	2	3	5	7
23	7	1	8	14	4	18	26
24	12	3	15	15	2	17	32
25	7	12	19	133	205	338	357
26	41	7	48	125	83	208	256
27	6	1	7	1	1	2	9
28	1	1	2	1	1	2	4
29	7	1	8	530	50	580	588
30	13	7	20	49	129	178	198
31	5	5	10	9	8	17	27
01 August	25	3	28	11	33	44	72
02	20	5	25	131	224	355	380
03	11	6	17	34	75	109	126
04	9	3	12	5	26	31	43
05	18	15	33	300	741	1041	1074
06	180	175	355	355	980	1335	1690
07	330	287	617	269	846	1115	1732
08	107	247	354	65	212	277	631
09	28	20	48	71	31	102	150
10	20	24	44	99	115	214	258
11	45	44	89	105	769	874	963
12	21	48	69	165	26	191	260
13	31	23	54	1594	717	2311	2365
14	9	6	15	24	26	50	65
15		3	3	1		1	4
16		1	1	4	2	6	7
17			0	15	1	16	16
18			0	4	10	14	14
19			0	13	124	137	137
20	4	3	7	8	73	81	88
21	5		5	6	33	39	44
22	3		3		2	2	5
23	11	7	18	5	6	11	29
24	12	33	45	17	141	158	203
25	107	168	275	16	62	78	353
26	41	35	76	11	13	24	100
27	10	32	42	49	136	185	227
28	7	10	17	25	34	59	76
29	9	7	16	26	26	52	68
30	31	40	71	20	36	56	127
31	21	15	36	11	18	29	65
01 September	36	79	115	70	156	226	341
02	66	89	155	236	412	648	803
03	12	10	22	13	29	42	64
04	9	6	15	8	5	13	28
05	14	19	33	1	1	2	35
Total	6142	7916	14058	5390	10374	15764	29822

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A3.9. Daily catch of rainbow smelt by codend trap, Wood Bay, 1989.

Date	Numbers by station and side of trap[1] Station 501 01	501 02	501 Total	Station 502 01	502 02	502 Total	Grand Total
28 June	63	20	83			0	83
29	68	14	82			0	82
30	75	177	252			0	252
01 July	68	16	84			0	84
02	24	11	35			0	35
03	39	37	76			0	76
04	89	35	124			0	124
05	269	72	341			0	341
06	118	23	141			0	141
07	235	76	311			0	311
08	199	27	226			0	226
09	145	17	162			0	162
10	71	17	88			0	88
11	250	42	292			0	292
12	83	21	104			0	104
13	3	70	73			0	73
14	4	5	9	14	1	15	24
15	5	8	13	17	4	21	34
16	17		17	14	7	21	38
17	8	6	14	45	1	46	60
18	5	1	6	149	1	150	156
19	3	1	4	150	9	159	163
20	8	3	11	103	7	110	121
21	9	1	10	35	18	53	63
22	4	1	5	29	26	55	60
23	9	4	13	25	16	41	54
24	23	26	49	6		6	55
25	7	16	23	5	4	9	32
26	11	5	16	77	10	87	103
27	4		4	18	1	19	23
28	1	3	4	48	60	108	112
29	7	1	8	31	23	54	62
30	3	10	13	10	87	97	110
31	10	68	78	22	74	96	174
01 August	8	20	28	14	16	30	58
02	12	10	22	214	11	225	247
03	24	6	30	272	24	296	326
04	6	7	13	60	28	88	101
05	3	2	5	15	4	19	24
06	9	9	18	9	2	11	29
07	23	22	45	14	12	26	71
08	36	14	50	12	15	27	77
09	41	21	62	29	15	44	106
10	9	23	32	39	5	44	76
11	8	19	27	20	1	21	48
12	33	20	53	65	3	68	121
13	9	14	23	12	5	17	40
14	10	12	22	115	6	121	143
15	3	6	9	31	2	33	42
16	1		1	372	189	561	562
17			0	789	244	1033	1033
18	1	2	3	32	15	47	50
19	9	5	14	12	15	27	41
20	14	13	27	7	3	10	37
21	10	4	14	6	9	15	29
22	5	1	6	159	12	171	177
23	4	3	7	47	16	63	70
24	3	1	4	25	5	30	34
25	7	1	8	6	1	7	15
26	8	4	12	146	10	156	168
27	4	7	11	49		49	60
28	8	4	12	43	2	45	57
29	8	6	14	16	13	29	43
30	7	1	8	45	12	57	65
31	14	15	29	151	10	161	190
01 September	7		7	24	22	46	53
02	10	7	17	10	3	13	30
03	9	7	16	3	5	8	24
04		1	1	4		4	5
05	1	1	2	17	2	19	21
Total	2301	1122	3423	3682	1086	4768	8191

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.10. Daily catch of fourhorn sculpin by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1] Station 501 01	501 02	501 Total	Station 502 01	502 02	502 Total	Grand Total
28 June		2	2			0	2
29			0			0	0
30			0			0	0
01 July			0			0	0
02			0			0	0
03			0			0	0
04			0			0	0
05	1		1			0	1
06	4	2	6			0	6
07	2	1	3			0	3
08	3		3			0	3
09			0			0	0
10	1	2	3			0	3
11	6		6			0	6
12	5	1	6			0	6
13	11	5	16			0	16
14	4		4	7	19	26	30
15	2	4	6	9	50	59	65
16	1	2	3	7	7	14	17
17	2	3	5	6	2	8	13
18			0	8	5	13	13
19	1		1	3	4	7	8
20			0	13	5	18	18
21			0	7	10	17	17
22			0	6	5	11	11
23			0	6	5	11	11
24	2		2	5	3	8	10
25	1	1	2	14	4	18	20
26	1		1	12	9	21	22
27			0	4	10	14	14
28			0	5	3	8	8
29	1	1	2	25	13	38	40
30	1	1	2	46	21	67	69
31	3		3	17	14	31	34
01 August			0	20	28	48	48
02	3	1	4	15	42	57	61
03			0	25	8	33	33
04			0	4	3	7	7
05	5	2	7	25	26	51	58
06	10	4	14	20	9	29	43
07	1		1	11	4	15	16
08	4		4	5	1	6	10
09	2		2	4		4	6
10	1	1	2	47	11	58	60
11	2	1	3	8	6	14	17
12			0	30	4	34	34
13	2		2	11	4	15	17
14		3	3	5	1	6	9
15	1		1	5	5	10	11
16	2	1	3	18	2	20	23
17			0	7	13	20	20
18		3	3	6	22	28	31
19	1	1	2	24	49	73	75
20	1	1	2	8	21	29	31
21	8	4	12	1	3	4	16
22	1	4	5	4	1	5	10
23	2	5	7	2	1	3	10
24	4	4	8	4	4	8	16
25	4	5	9	17	7	24	33
26	1	2	3	12		12	15
27	3	1	4	27	11	38	42
28	3	5	8	32	15	47	55
29	3	1	4	17	15	32	36
30	3	2	5	14	6	20	25
31	3		3	62	29	91	94
01 September	4		4	11	5	16	20
02	14	3	17	55	49	104	121
03	14	3	17	98	300	398	415
04	3	2	5	42	12	54	59
05	1		1	32	5	37	38
Total	158	84	242	928	911	1839	2081

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.11. Daily catch of Pacific herring by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June			0			0	0
29			0			0	0
30			0			0	0
01 July			0			0	0
02			0			0	0
03			0			0	0
04			0			0	0
05	1		1			0	1
06			0			0	0
07			0			0	0
08			0			0	0
09			0			0	0
10			0			0	0
11			0			0	0
12	2		2			0	2
13			0			0	0
14	1	10	11	2	1	3	14
15	6	15	21	3	12	15	36
16	12	33	45	3	19	22	67
17	4	2	6			0	6
18			0	21	1	22	22
19	4	5	9	134	472	606	615
20	6	5	11	50	71	121	132
21		2	2	18	5	23	25
22	7	2	9	59	102	161	170
23	31	46	77	225	353	578	655
24	163	66	229	91	33	124	353
25	4		4	75	36	111	115
26		12	12	137	32	169	181
27	2		2	16	23	39	41
28		1	1	10	13	23	24
29		4	4	21	90	111	115
30	13	49	62	7	37	44	106
31	30	146	176	14	23	37	213
01 August	14	58	72	78	15	93	165
02	20	38	58	220	50	270	328
03	24	18	42	72	15	87	129
04	3	1	4	452	43	495	499
05	3	10	13	106	7	113	126
06	6	5	11	283	5	288	299
07	1	3	4	74	10	84	88
08		1	1	5	5	10	11
09			0	1	2	3	3
10	5	1	6	1		1	7
11			0		1	1	1
12	1		1	4		4	5
13			0	1	2	3	3
14		2	2	4		4	6
15			0	1		1	1
16			0	1	1	2	2
17			0	2	3	5	5
18		1	1			0	1
19		1	1	1	25	26	27
20	11	2	13	50		50	63
21	4	1	5			0	5
22			0	32		32	32
23		1	1	11	1	12	13
24	2	6	8	2	7	9	17
25	6	18	24	4	4	8	32
26	3	5	8	5	3	8	16
27			0			0	0
28	1	3	4	2	2	4	8
29	7	1	8	1		1	9
30	6	3	9	4	3	7	16
31	12	5	17	1		1	18
01 September	5	7	12	31	3	34	46
02	2		2	3	1	4	6
03			0		2	2	2
04	1		1	1		1	2
05	8		8	25	33	58	66
Total	431	589	1020	2364	1566	3930	4950

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.12. Daily catch of saffron cod by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June			0			ND	0
29			0			ND	0
30			0			ND	0
01 July			0			ND	0
02			0			ND	0
03			0			ND	0
04			0			ND	0
05			0			ND	0
06			0			ND	0
07			0			ND	0
08			0			ND	0
09			0			ND	0
10			0			ND	0
11			0			ND	0
12			0			ND	0
13			0			ND	0
14			0	13	80	93	93
15	13	8	21	29	37	66	87
16			0	148	16	164	164
17		1	1	73	9	82	83
18	1		1	4		4	5
19			0	2	2	4	4
20			0	7		7	7
21			0	1		1	1
22			0	5		5	5
23			0	2		2	2
24			0		1	1	1
25			0			0	0
26			0			0	0
27			0	1		1	1
28			0			0	0
29			0	2	4	6	6
30			0	1	1	2	2
31			0			0	0
01 August			0	4	3	7	7
02			0	3	2	5	5
03			0	2		2	2
04			0	4	3	7	7
05			0	2		2	2
06			0	1		1	1
07			0			0	0
08			0			0	0
09			0	2		2	2
10			0			0	0
11			0			0	0
12			0			0	0
13			0	11		11	11
14			0	12	1	13	13
15			0	3		3	3
16			0		1	1	1
17			0	3		3	3
18			0	1		1	1
19			0			0	0
20			0	3	2	5	5
21	1		1	11	1	12	13
22			0	7		7	7
23	1		1	3		3	4
24			0	5		5	5
25			0			0	0
26			0	58		58	58
27			0	3		3	3
28			0	17		17	17
29			0	1		1	1
30			0	3		3	3
31			0	18		18	18
01 September			0	16	11	27	27
02	1		1	38	14	52	53
03			0	1	1	2	2
04	1		1	6		6	7
05			0	1		1	1
Total	18	9	27	527	189	716	743

[1] Side 01 refers to the Anderson River side of the lead

Appendix A3.13. Daily catch of longnose sucker by codend trap, Wood Bay, 1989.

Date	Number by station and side of trap[1]						Grand Total
	Station 501			Station 502			
	01	02	Total	01	02	Total	
28 June	66	45	111			0	111
29	19	12	31			0	31
30	14	3	17			0	17
01 July	2	4	6			0	6
02	7	5	12			0	12
03	7	2	9			0	9
04	37	9	46			0	46
05	15	11	26			0	26
06	34	19	53			0	53
07	42	12	54			0	54
08	9	1	10			0	10
09	6		6			0	6
10	25	21	46			0	46
11	10	2	12			0	12
12	9	51	60			0	60
13	118	67	185			0	185
14	6	6	12			0	12
15	1	6	7			0	7
16	5	1	6			0	6
17	8		8			0	8
18	4	2	6	2		2	8
19	14	25	39	1		1	40
20	6	1	7	1		1	8
21	3	4	7		1	1	8
22	2	1	3			0	3
23	1	4	5			0	5
24	4	3	7			0	7
25	4	5	9			0	9
26	2	7	9			0	9
27	1	5	6			0	6
28		2	2		1	1	3
29	7	5	12			0	12
30	2	6	8			0	8
31	1	3	4			0	4
01 August	2	2	4			0	4
02	1	2	3			0	3
03	1	1	2			0	2
04		3	3			0	3
05		5	5			0	5
06	1	1	2			0	2
07	6	6	12			0	12
08	2	11	13			0	13
09	6	17	23			0	23
10	11	23	34			0	34
11	18	28	46			0	46
12	23	93	116	2		2	118
13	6	7	13	2		2	15
14	6	2	8		2	2	10
15	14	4	18	1		1	19
16	10	2	12	1	1	2	14
17	2		2		2	2	4
18	1		1			0	1
19	3	2	5	1		1	6
20	3	1	4			0	4
21	2		2			0	2
22	6	3	9			0	9
23	4	3	7			0	7
24	3		3			0	3
25	2	4	6			0	6
26	2	1	3		2	2	5
27		3	3		1	1	4
28	5	4	9			0	9
29	1		1			0	1
30			0			0	0
31	1	2	3			0	3
01 September	3	5	8			0	8
02	1	5	6			0	6
03		3	3			0	3
04	6	2	8			0	8
05	1		1			0	1
Total	644	595	1239	11	10	21	1260

[1] Side 01 refers to the Anderson River side of the lead

Appendix A4.1. Daily trap net catch of minor species at Station 501, Wood Bay, 1980.

Date	Number Captured by Species												
	BLPK	STIC	NNPK	NNBT	WISC	NNCS	NNSB	CHUM	CHUM	CPLE	BOWF	LKCH	TOTAL
28 June			3		1						1		5
29		1	1										2
30		3	1										4
1 July		2		1	1		1						5
2					1		4						5
3			4	2			1						7
4			1	2					1				4
5			5	2	1								8
6			1		2								3
7			2										2
8			1	1									2
9			1										1
10			1				1						2
11			1	2									3
12		3	5				1		1				10
13			5	1									6
14			2				1						3
15				2									2
16													0
17													0
18			1										1
19			1		1								2
20		1		3	3								7
21		1		1	1								3
22			2										2
23													0
24		4	2										6
25		1	4										5
26		2	3										5
27		1											1
28													0
29		2					1						3
30													0
31													0
1 Aug			1										1
2													0
3			1										1
4			1										1
5		2	1										3
6			2										2
7				1									1
8		2	1										3
9			1	2									3
10													0
11		1										1	2
12		1	1										2
13			1										1
14		1	1	2									4
15			1	1									2
16							1						1
17				1									1
18													0
19		3	1										4
20		1	1										2
21													0
22								1					1
23				1									1
24			1										1
25													0
26			1										1
27							1						1
28													0
29													0
30													0
31			2				1						3
1 Sept			2				1						3
2	1		3		2								6
3	1		2					1					4
4			3		3			1					7
5			1										1
Total	2	40	83	30	11	2	10	3	2	0	1	1	302

Appendix A4.2. Daily trap net catch of minor species at Station 502, Wood Bay, 1980.

Date	Number Captured by Species												
	BLPK	STIC	NNPK	NNBT	WISC	NNCS	NNSB	CHUM	CHUM	CPLE	BOWF	LKCH	TOTAL
28 June													0
29													0
30													0
1 July													0
2													0
3													0
4													0
5													0
6													0
7													0
8													0
9													0
10													0
11													0
12													0
13													0
14		1	1	1		1							4
15	1	1		1									3
16					1					1			2
17			1										1
18													0
19		2	1			1							4
20		2				1							3
21													0
22		1								1			2
23													0
24		1			1								2
25		2											2
26		2	1		1								4
27		3		1									4
28													0
29	3				1								4
30	2						1						3
31													0
1 Aug	1												1
2	2						1						3
3	1	1											2
4		1			1								2
5		2											2
6													0
7													0
8		1					1						2
9		2											2
10													0
11		1											1
12	2												2
13		2											2
14		1											1
15		1	1										2
16	1	1											2
17	17	2				1							20
18									1				1
19	1	1											2
20	1				1								2
21		2											2
22				1	1								2
23		1	1						1				3
24		1											1
25		2	1	1									4
26	4												4
27	6												6
28		3											3
29	2	10							1				13
30	6	2				2							10
31		6	1			3			2				11
1 Sept	123	2		1		1							127
2	21	6		1		3			1				31
3	1					1							2
4		4			1					1			6
5		4		1	1								6
Total	195	72	6	6	9	14	3	6	7	1	0	0	319

Appendix A5.1. Length frequency distribution for measured sample of Arctic cisco by sampling cycle and side of trap at station 501, Wood Bay, 1985.

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-9																								
10-19																								
20-29																								
30-39																								
40-49									1				1	3									3	3
50-59	3	3	2			1			1		46	46	53	12	7								103	61
60-69	5	3	2						1		21	39	54	24	26	16							110	86
70-79	22	41	23	14	2	4		2	5	7	12	8	12	8	19	13	8	1	5	1	3	1	103	89
80-89	110	96	123	106	19	27	3	4	3	2	2	4	6	5	4	4	9	5	3	19	13	5	298	261
90-99	130	109	249	136	30	75	11	10	13	6	6	5	4	4	2	7	2	1	1	13	11	6	480	362
100-109	70	60	160	83	45	61	15	22	31	11	26	11	12	10	4	7	1	1	1	7	1	1	362	268
110-119	21	15	44	24	22	17	11	15	15	11	16	4	12	6	14	17	4				1	1	149	112
120-129	2	4	7	4	7	4	2	8	6	8	4	1	10	7	6	8	3	1			1		47	53
130-139	1	8	6	3	1	3	2	2	4	5	1					3	3	1	2	1	5	2	27	32
140-149	7	10	7	9	6	1			1		2				2	1	1		1	4	6	7	31	26
150-159	8	7	8	6	6	3			1	1	2				1	1			1	7	3	1	26	21
160-169	8	7	4	2	2		1								1	1				1	2	1	17	12
170-179	3	3	5	2	1											1				1	1	1	10	7
180-189			1			1						1											2	4
190-199		1		1												1			1	1			4	3
200-209	1	2	1		1				1														4	3
210-219		1															1		1	1			4	3
220-229						1											1						1	3
230-239		1															2		1				1	3
240-249	3		1																					2
250-259																	1		1				5	1
260-269		1															2							2
270-279		1														1							1	1
280-289																								1
290-299																	1	1					1	1
300-309												1	1										3	3
310-319																1	1	1	1	1	1	1	4	2
320-329															1		1	1	3	1	1		2	3
330-339					1		1									1	1	1	2	1	2		4	5
340-349						1	1	3							1	2	2	2	5	1	2		8	23
350-359		1					2	5	1	2					2	2	3	2	8	5	16		16	32
360-369							2	5	1	1					2	3	4	2	15	12	25		22	43
370-379							5	8	2	1	1	2			1	3	2	5	12	10	21		18	43
380-389						1	1	3		2			1		3	2	1	4	5	4	26		22	40
390-399							4	7							1	1			3	2	17		11	34
400-409				1			2	2											4	1	12		10	23
410-419							1	1		1									3	2	2		6	6
420-429						1		1								1			1	8			3	9
430-439																	1							3
440-449																								
450-459						1																		
460-469						1																	1	
470-479								1											1				1	1
480-489																								1
490-499																							1	
500-509																								
Total	394	384	643	401	153	201	71	109	142	152	183	91	87	76	45	39	90	83	104	172			1912	1688

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.2. Length frequency distribution for measured sample of Arctic cisco by sampling cycle and side of trap at station 502, Wood Bay, 1985.

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-9																								
10-19																								
20-29																								
30-39																								
40-49							1				1	1											2	1
50-59							1		9	11	22	28	24	20	4								43	44
60-69							5	2	5	3	4	9	29	26	18	7							95	65
70-79							1		3	2	9	7	29	15	15	10	3	4	6	2	12		53	48
80-89							6	6	3	4	1	9	7	7	3	1	1	15	4	3	30	4	32	84
90-99							15	20	19	8	12	19	11	12		1	1	2	3	2	24	3	64	80
100-109							19	22	34	13	31	29	25	33	4	1	1				2	3	116	103
110-119							16	13	23	10	21	13	41	44	5	4	1	1	1	2	3	1	108	88
120-129							3	4	19	3	21	6	24	17	6	8	8	1	1	1	5	3	86	45
130-139							3	3	6	1	5	1	5	4	6	2	9	1	2	1	10	7	41	27
140-149							11	4	4		2		5	2	1	1	6	1	1	2	2	1	34	11
150-159							9	3	4		2	4	7	2	1	1	1	2	1	1	1	1	26	13
160-168							5		2		3		2	2	1	1	2	1	2	2	1	3	17	4
170-179							2		2				2	1	3		3	1	2	2	1	4	18	7
180-189											1		1	1				1	1		1	6	8	7
190-199											1					1			1	1		5	3	4
200-209							2		1	1			1						1	1		1	4	2
210-219							1																1	1
220-229																			1					1
230-239																					1	1	2	3
240-249									1				1			1					3	1	3	3
250-259							1				1			1					1	1	1	2	2	7
260-268									1						1	1			4	3	1	2	4	4
270-279																1	1		3	1			2	6
280-289								1	1			1							4	1			4	5
290-299							1												2		2		4	7
300-309							1			1									7	2	2		6	8
310-319							2	4											5	2	2	5	4	20
320-329							2	4								1			6	2	2	5	10	25
330-339							3	8	4	2	3	1	2	1	2		4	1	9	1	7	2	18	37
340-349							1	1	13	10	5	2							12		22	7	25	60
350-359							2	3	30	21	5	9		4	1	2	5		24	9	32	14	71	138
360-369							3	2	40	28	13	14	2	3	5	4	11	6	29	10	36	9	85	175
370-379							2	9	33	24	13	20		4	1	5	6	7	35	8	40	10	73	201
380-389							3	10	24	18	8	18	2	4	3	4	7	7	43	8	26	6	61	205
390-399							1	6	11	12	4	23	3	2	3	2	2	7	15	7	16	8	87	67
400-409							1	4	6	12	3	12	1		2	4	3	3	15	3	18	3	82	267
410-419							1	5	5	5		6	2	1	1	2		1	7	1	6	1	73	323
420-429									7	8		3			1				1	1	6	1	109	443
430-439								1		6		1	1				2	1			1	1	1219	1804
440-449										1					2	1	2		2					
450-459						1									2									6
460-469																							1	
470-479																								
480-489																			1					1
490-499																								
500-509								1																1
Total	NO	NO			112	117	309	214	186	248	261	205	87	67	82	267	73	323	109	443			1219	1804

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.3. Length-frequency distribution for measured sample of least cisco by sampling cycle and side of trap at Station S01, Wood Bay, 1980.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																				Total	
	1		2		3		4		5		6		7		8		9		10			
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02
0-9																						
10-19																						
20-29																						
30-39																						
40-49						1		1		31	14	7									40	14
50-59	2	2	5	1			3		68	64	154	29	45	19	9	5					286	120
60-69	8	8	8	3	1	4	7	2	23	23	80	52	90	99	108	126	40	48	7	4	381	368
70-79	168	53	135	54	13	28	20	13	10	9	11	9	41	61	67	80	101	101	129	106	715	613
80-89	280	234	377	251	117	125	50	24	30	17	7	12	9	19	19	11	80	73	142	146	1120	912
90-99	162	132	220	136	117	100	52	36	35	40	19	61	13	25	7	7	7	15	20	34	660	564
100-109	17	31	51	41	47	58	18	18	23	23	50	52	17	35	10	15	10	7	2	2	245	282
110-119	12	19	15	24	10	23	36	50	19	28	16	37	26	22	20	29	11	11	4	6	160	249
120-129	17	42	29	50	17	27	40	62	30	48	5	39	7	15	16	15	18	8	6	15	187	321
130-139	21	76	38	78	7	20	16	30	27	26	9	31	2	22	23	18	16	15	16	20	176	337
140-149	23	74	60	85	10	32	23	29	12	26	1	17	4	19	10	11	9	21	14	22	175	336
150-159	38	92	64	126	24	72	21	44	19	43	5	30	7	40	5	9	22	30	25	19	231	505
160-169	15	34	30	56	27	50	9	20	20	25	2	10	6	30	6	7	21	23	15	21	151	301
170-179	11	25	11	24	14	10	3	16	4	14	2	20	2	21	6	7	14	17	14	19	81	182
180-189	16	25	4	14	3	16	6	9	4	9		8	2	17	2	5	11	11	15	8	63	122
190-199	8	11	3	3	1	4	1	1	4	8		5	3	6	3	5	11	5	7	6	42	54
200-209	4	10	1	2	1	5	1	1	1	3		2		5	5	2	3	5	4	2	20	37
210-219	4	9	1	2	2	3	2	4	2	3		4	1	2	4	3	6	8	6	2	28	40
220-229	5	3	1	3		2		1	2	4	3	2	1	1	4	3	1	2	5	4	22	25
230-239	8	9		2		3				1	1	3		3	5		3	3	2	2	19	26
240-249	3	5	1	1		6		2		1	1	2		3	1	2	1	4	1	2	8	28
250-259	1	6	1		2	6	3	1	3	1		4	1	3	2	4	3	5		2	16	32
260-269		2	1	1	3	2	1	2		2		6	1	1	2	2	3	1		4	11	23
270-279	1	3			1	4		2	1	2		2	1		2	4	2	2	1	1	9	20
280-289	1	2				2		2		3		3	2	4		3	1	7	1	3	5	29
290-299	3					2	1			4	1	3	1	1	5	4	3	13	5	2	19	29
300-309	1	2			1	8		1	1	3	2	5	2		5	3	2	9	4	7	18	36
310-319		2				8	1	7		3	1	9	1	4	4	8	6	5	7	14	20	60
320-329			2	1		10	3	11	3	4	1	8		5	5	9	1	9	8	19	23	76
330-339		2	1		1	6	3	6	1	5		7		4	6	8	2	6	10	24	24	68
340-349		1				3	1	6	1	7	2	9	1	5	3	5	4	7	13	38	25	81
350-359						3	1	1		6	1	7	2	2	1	9	3	13	5	25	13	66
360-369						1	5	5	1	2		4	2	2		3		12	4	20	12	48
370-379		1			1	2		1		1		2	1	1		1	2	2	2	12	6	23
380-389								3				1				1			1	4	1	9
390-399																				3		3
400-409						1										1		2				4
410-419												1										1
420-429																		1				1
430-439																						
440-449																		1				1
Total	780	915	1060	956	430	664	328	418	375	472	381	504	300	505	367	431	497	592	495	618	5051	6080

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.4. Length-frequency distribution for measured sample of least cisco by sampling cycle and side of trap at Station S02, Wood Bay, 1980.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																				Total	
	1		2		3		4		5		6		7		8		9		10			
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02
0-9																						
10-19																						
20-29																						
30-39					1																1	
40-49					4		1		1												6	
50-59					4		4	2	18	21	77	48	21	10	2						126	90
60-69					2	2	1	3	13	9	99	23	81	23	19	34	4	30	2	9	221	142
70-79					4	3	5	6	3	2	14	4	24	17	28	37	37	61	20	28	135	208
80-89					47	34	29	22	7	13	5	11	1	2	3	11	16	26	29	65	137	184
90-99					41	34	52	25	28	31	31	51	4	3	4	6	3		6	4	160	154
100-109					25	19	30	27	38	42	70	75	17	11	4	10	1	2	1	2	186	188
110-119					19	12	34	17	32	24	43	52	23	28	10	17	3	3		2	164	155
120-129					31	6	17	24	27	27	21	36	6	15	13	7	3	7	4	5	122	127
130-139					37	16	20	17	17	21	17	21	1	3	8	6	3	4	9	10	112	98
140-149					52	28	11	15	13	11	12	17	3	5	6	6	4	2	5	2	106	86
150-159					45	28	24	19	16	16	18	34	7	7	1	6	3	6	5	2	119	118
160-169					34	11	8	15	6	18	12	14	7	13	4	3	9	10	3	6	83	90
170-179					20	9	10	6	8	8	12	4	9	7	6	4	1	8	5	5	71	51
180-189					16	4	3	2	8	2	7	9	5	4	3	5	3	7	6	8	51	41
190-199					10	3	5	4	6	1	2	7	7	1	6	7	4	5	2	3	42	31
200-209					2	4	3	1	6	6	2	6	6	1	2	4	4	1	6	5	31	28
210-219					6	7	6	1	3	2	4	5	1	2		6	2	3	4	3	26	29
220-229					6	4	2	1	8	4	4	5	6	1	3	7	4	3	8	8	41	33
230-239					2	6	2	1	5	5	7	2	3	2	1	6	2	3	3	2	25	27
240-249					5	3	8	1	8	6	6	4	2	1	2	2	5	3	5	3	41	22
250-259					2	2	7	4	4	3	7	5	4	4		6	5	5	3	2	32	31
260-269					4	4	4		12	3	8	1		3	3	2	6	5	5	3	42	21
270-279					1	5	12		6	2	6	5	4	2		9	6	2	9	9	44	34
280-289					3	6	2	2	3	4	7	5	6	1	2	8	8	2	4	4	35	32
290-299					2	8	11	3	6	5	7	2	5	8	4	11	11	5	4	9	50	51
300-309					5	6	13	5	7	5	7	2	9	5	2	12	2	6	4	15	44	56
310-319					4	6	10	5	1	3	9	1	5	10	5	13	4	13	1	25	38	76
320-329					2	7	6	4	4	6	7	6	5	14	4	20	1	19	4	17	33	93
330-339					2	7	4	4	3	10	3	4	6	8	1	19	4	15	3	25	26	92
340-349					3	3		3	3	9	2	3	9	13	1	20	4	29	2	29	24	108
350-359					1	3	6	9	2	13	2	3	5	15	2	13	2	29	2	35	22	120
360-369						5	1	1		9		2	1	8	1	15	2	11	1	19	6	70
370-379					2	1	1	4		5		1		2		7	2	4		10	5	34
380-389								3		1		1				1		3				7
390-399						2				1						1		1		1		6
400-409																				1		1
410-419					1																1	
420-429																						
430-439								1														1
440-449								1														
Total	NO		NO		445	298	352	258	317	347	528	469	293	258	150	341	168	340	166	426	2418	2737

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.5. Length frequency distribution for measured sample of broad whitefish by sampling cycle and side of trap at Station 501, Wood Bay, 1989.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-9																								
10-19																								
20-29																								
30-39																								
40-49					8	1	2	1	1								1						12	2
50-59		1		1	32	16	94	57	61	44	19	18	5	3									211	140
60-69					15	8	26	25	88	63	54	71	54	48	22	16	8	12		2			307	245
70-79	8	16	3	5	2	1	2	3	8	6	34	23	53	62	74	63	62	102	50	43			296	324
80-89	33	66	8	20	8	9	1	1			2	4	20	26	30	36	65	68	64	62			240	292
90-99	44	91	8	22	31	44	2	5		2		1	2	7	7	5	19	17	19	14			132	208
100-109	12	28	10	15	36	28	7	11	2	6	2	1	1		1	1	2	3	5	3			80	96
110-119	3	7		7	11	10	9	2	5	4	1	10	3	8			1		1				34	48
120-129	2	8		2	8	2		4	1	6	1	4	1	7				2	1				14	35
130-139	2	8			2	4	1	2	1	2		1		2		2					1		6	22
140-149	3	6	1	1		1				2		1	1			1	1				2		6	14
150-159		5	1	2	2	1	2	2		2			1	2		1					1		4	16
160-169	2	1			1	1		3				1									1		3	7
170-179	4	3		1			1			1		1	1	4							2		6	12
180-189	1	3				2		3					1						1				3	8
190-199	2	4	1	1		2	1	1				1								1			4	10
200-209		1			1		1							1									2	2
210-219	1	2																			1		1	3
220-229		1				2																		3
230-239				1		2		1													1			5
240-249				1								1									1			3
250-259		1				1			1			1									1			5
260-269	1							1															1	1
270-279				1																				1
280-289	1	2								1											1		1	4
290-299		1		1								1									1			4
300-309	2	4				4	2			1		1											4	10
310-319	2	10	2			1		2	1			3			1						1		5	16
320-329	5	12	1	2	1	5	2	1				1			1		1						9	21
330-339	6	14	1			3		2		5	1				1						3		8	28
340-349	7	15	1	1		4	2	2		1											1		10	24
350-359	3	13		6	1	1	1	2		1		3	2		1	1					2		8	28
360-369	3	11		3	1	1	1			1		1		1		1	1				4		5	24
370-379	3	7		1	1	2										2					6		4	18
380-389	2	7						2		1						1					1		2	12
390-399	1	6		2	1										1	1	2				4		3	19
400-409	2	3			1		1	1								1	1				3		4	9
410-419	1	3		1		1		2				1				1							1	9
420-429	1	2	1	1		1		1								2					2		2	9
430-439	1	2				1			1							1							1	5
440-449		8				1		3		1											2			15
450-459		3		2					3		2			1							2		2	14
460-469	1	2		2			2		1		2										1		3	8
470-479		5		2		1		2	1		1								1		6		2	17
480-489		8		2		2	1			1											1		1	14
490-499		6		3		1	1										1				1		1	12
500-509	1	7		2	1			1	1	2		1					1				2		3	16
510-519		4	1				1	1		2				1		1	1						2	12
520-529	1	4		1							1						1				2		2	8
530-539		1						1	1	1		2							1	2	2		2	8
540-549		2		2		1		1	1	1											1		2	7
550-559		1						1				1		1										4
560-569																								
570-579																			1				1	
580-589																			1				1	1
590-599																								
600-609		1																						1
Total	161	416	39	113	186	163	163	147	172	163	155	150	145	174	145	143	150	213	143	191			1448	1882

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.6. Length frequency distribution for measured sample of broad whitefish by sampling cycle and side of trap at Station 502, Wood Bay, 1989.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-9																								
10-19																								
20-29																								
30-39																								
40-49					8	1	10	4	1		1	1											20	6
50-59					24		46	60	44	52	15	10	5	2		1							134	134
60-69					9	1	17	24	60	42	87	63	50	29	9	13	5	13	1	4			238	189
70-79						1	1	8	4	42	21	49	26	53	48	32	66		34	38			221	204
80-89					6	1	1	2	1	2		20	6	17	38	44	34	55	66				147	146
90-99					18	1	5	2	1	1		1		8	5	18	6	15	11				60	24
100-109					15	4	4	3	4	1	3			1	1	5	1		3				29	16
110-119					10	2	4	1	11	3	3	3	1	1	1	1	1						31	12
120-129					6	1	3	2	3	3		1	1	1	1	4			1				14	13
130-139					1			2	1				1		1	1							5	3
140-149					2		3		1	2				1		2		1					4	8
150-159					2		1		1							1			1	4			4	6
160-169					2	1	1									1		1		1			3	4
170-179					1		1				2		1			1							2	4
180-189					2		2			1													4	1
190-199							1																1	
200-209																								1
210-219					1			1															1	1
220-229					2					1						1							2	2
230-239																								
240-249					1		1		2										1				4	1
250-259																								
260-269					1														1				1	1
270-279					1																		1	
280-289								1															1	
290-299																			2					3
300-309							1	1		1													1	2
310-319						3		1	1	1						1							1	6
320-329					2	1	4			3						1			1				6	6
330-339						1	3	4							1								6	5
340-349					2	6	1	3		4				1	1	3		3		3			4	23
350-359					1	3	3	8	2	2		1		2	1								7	17
360-369					5	4	3	1		1		1		2		1		2					8	12
370-379					2	2	1		1	2				1	1	1	1		2				6	8
380-389					1	4	1	1				1		1		2	1	1	2				3	12
390-399						2	1	1		3				1		2	1	1	1	2			3	13
400-409						2	2	4	2	3			1	2					1	2			5	13
410-419			2			1	2	1						1						2			4	9
420-429			1			1				2										2			4	4
430-439			1	2		1	1								1	1	1			2			3	6
440-449				1	1	3								1			1	1		2			2	4
450-459			1	1	1						1			2		2		1		3			2	9
460-469			3	2	1	3	1	2						3		1				2			2	9
470-479			1			2		2							1	3		1		1			7	12
480-489						1		4		1						2				2			2	8
490-499			3			2		1		1	2	1		2										13
500-509			1	3			1	1	1	1			2			1		2		1			2	10
510-519			2	3	1			4			1			1	1	1		1		2			5	10
520-529			1					2	1									3					4	13
530-539			2											1		1							1	7
540-549			1		1					2									1	1			1	5
550-559			1			1		1	1	1				1		1		1					1	4
560-569			1								1												1	7
570-579				1							1				1								1	1
580-589																1		1					3	2
590-599																								
600-609			1																				1	
Total	80	80	130	62	125	136	149	154	150	122	131	91	90	142	111	146	115	171			1676	1624		

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.7. Length-frequency distribution for measured sample of lake whitefish by sampling cycle and side of trap at Station 501, Wood Bay, 1980.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																				Total	
	1		2		3		4		5		6		7		8		9		10			
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02
30-39						1															1	
40-49	1																				1	
50-59									5	4	10	6	5	2	1						21	12
60-69	1		2						1	4	31	9	29	22	3	9	5	5	1	2	73	51
70-79	15	2	4	2	1	1					3	7	11	13	27	15	34	35	27	8	122	83
80-89	38	27	11	10	21	8	4	6				1	1		3	3	14	8	19	3	131	61
90-99	27	9	49	20	63	34	43	25	14	6	1	2	1	3			2	2	4	1	206	102
100-109	6	3	18	4	12	12	30	28	16	10	20	13	7	13	2	1	2	1		2	153	96
110-119	4	3	4	6	7	4	5	3	21	6	15	18	21	24	7	2	11	7	4	4	99	76
120-129	16	12	16	5	11	9	2	4	4	2	4	3	12	9	14	8	15	7	12	1	106	66
130-139	22	20	26	11	10	14	3	5	4	1		1		4	3	1	24	10	12	12	113	87
140-149	11	25	11	8	24	22	4	4	4	6		4		2			5	6	5	3	84	81
150-159	5	6	9	8	14	6	5	3	4	1	4	1	3	3		1	4		1		49	30
160-169	7	7	3	4	7	2	2		1			1	6	8	2			1	2	1	30	27
170-179	5	8	7	2	3	5			3		1	3	3	3	1	2	3	1	2	1	28	25
180-189	7	11	8	7	1	6			1		1		5	1			1	1	1	2	25	28
190-199		9	4	1	2	1			1	1		3						2	3	3	13	17
200-209	2	2	2	1	1	1		1				1	1				2				8	6
210-219	2	2	1	1	1	2	1	1							1	2	2			1	7	8
220-229	3	1	3	1	1	1									1					1	8	4
230-239	1	3		2		2	1														2	7
240-249	2	3	1	1	1	2			1	2		1			1			1		2	6	12
250-259	3	2	2			1		1					1				1			1	7	5
260-269		3		1		2	1	1	1						1	1			1		4	8
270-279	1	2	1				3	2				1		1			1		1		7	6
280-289		1			1	1	3		1	1					1		1				6	4
290-299	1	2					2	2	2	1											5	6
300-309		3					3	2							1					3	3	9
310-319						2	1	1	1	2					1					1	2	7
320-329	1							2		3					2				2	2	3	9
330-339	1	2		1		2		2				1	1		1	1				3	4	12
340-349	1	1	1		1	1	3	2		1				1	3	4	1			2	10	12
350-359						2	1	4	1	1		2	1		1	2			1	4	5	15
360-369	1	4	2	1		3	5	3		3	2		2	1		1		1	4	4	16	21
370-379	2	2	2	1	1		3		2	3	2	2	2	1	1	0		1	3	6	18	24
380-389	1	1	2	4			5	9	2	4	2	8	5	3	4	3	1	2	4	15	26	48
390-399	4	6		2			4	9	4	9	3	6	1	1	5	2	3	3	2	17	27	60
400-409	6	5	3	1	3	5	5	8	4	6	4	6	2	1	2	12	2	6	2	15	35	66
410-419	3	1	4	7	2	6	8	11	5	13	5	8	1	2	2	6	3	8	3	22	36	84
420-429	2	6	1	3	2	7	9	5	4	6	3	11	3	5	4	4	1	8	3	20	32	75
430-439	2	7	5	2	3	4	6	2	3	7	5	7	3	3	2	6	1	9	3	13	33	60
440-449	2	2	2	2		1	1	4	2	9	5	10	2	3	2	5		10	1	12	17	58
450-459	1	5	1	1	1		3	3	2	5	1	4	1	1		3		3	1	6	11	31
460-469				1	3	1	1	4		2	1	6	2	1			1			5	8	20
470-479				1			1	2	1	3	1	3		1			1	3	1	4	6	16
480-489		1					4											1		2	4	4
490-499	1							1	1						1			1		1	2	4
500-509																						
510-519			1		1			3													2	3
520-529		1						2	1					1							1	4
530-539																						
540-549							1														1	
550-559																						
560-569								1		1	1										1	2
570-579		1			1				1	1											2	2
580-589														1								1
590-599								1														1
600-609																				1		2
610-619										1												1
620-629									2												2	
630-639																						
640-649							1													1		2
650-659													1								1	
660-669																						
Total	208	215	246	121	229	174	175	167	140	135	129	146	136	136	94	108	141	143	125	207	1623	1552

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.8. Length-frequency distribution for measured sample of lake whitefish by sampling cycle and side of trap at Station 502, Wood Bay, 1980.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																				Total	
	1		2		3		4		5		6		7		8		9		10			
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02
30-39																						
40-49							1														1	
50-59									1		1	1									2	1
60-69											18	10	4	2							22	12
70-79					1				1	1	1				1	1	3	3	0	1	15	6
80-89					1	1	2		1	1					2	2			4	1	10	5
90-99					12	3	17	8	4	4	7	7	1		1		1	1	1		44	23
100-109					14	3	21	10	23	9	33	15	2	2	1			1	1		95	40
110-119					1		5		13	4	22	17	10	7	5	4	3	3	5	1	64	36
120-129					7	3	1		1	3	3	3	4	1	12	5	1	0	0		38	23
130-139					23	5	7	1	2	1	5			2	6	7	5	7	14	1	62	24
140-149					16	5	13	4	3	2	7	1		1	2		1	5	4	3	46	21
150-159					10	1	4	3	0	1	7	1	3	2				1	2		34	12
160-169					6	1	3	2	4	1	7	3	1	1	1	2	3		2	1	26	11
170-179					6	2		2	2	1	4	2	3	2	3	2	1	1	3	1	22	13
180-189					9		4	1	6		2		1	2	4	2	1	2	2	4	29	11
190-199					4	3	2	2	4	1	3				5	2	1	3	1	1	20	12
200-209					2	1			4		2	2		1	2			3	1	1	11	0
210-219						1			1		3				1	2			1		6	3
220-229					4	2	1	4	3		2		3		2	2		4			15	12
230-239					1	2	1	1	3		3		1		1	2	1	1	1		12	6
240-249					1	1	1	1	2						2					1	6	3
250-259					3		3	1	3	1			1		2		1	1		1	13	4
260-269					1		7	1	4	2		1					1	2	1	1	18	7
270-279					1		4		6	1	2		1			1	1	1	1		16	3
280-289					2	1	2	2	3	1	3	1	3		1	2	3	1		3	17	11
290-299						1	3	6	2		1		3		1	1	2		1	1	13	8
300-309						1		1	3	2	1	1	1			2	2	3	1	2	8	12
310-319					1		1		4		2	1		2		2	1	1	1	2	10	6
320-329						2	1	3	3	2				1	1	1	2		1		8	9
330-339					3	1		3			2		2		1	1	3	3	1	3	12	11
340-349					1	2			1	2		1	1	2	1	1	4	3	1	4	8	16
350-359					1	3	4	1	3	4		5	2	4	2	4	2	5	2	6	16	32
360-369						2	2	5	3	6	2	2	4	7	2	7		4	3	8	16	41
370-379					2	3		2	5	4	2	4	7	5	1	6	2	6	2	12	21	42
380-389					2	1	1	6	3	4	3	3	5	6	2	1	3	7	1	14	20	42
390-399					3	10	5	3	4	5	1	6	7	14	6	6	4	13	5	9	35	66
400-409					2	3	4	9	3	9	4	2	3	14	6	9	1	6	6	21	29	73
410-419					2	6	4	11	3	12	2	4	8	18	3	4	3	15	1	18	26	88
420-429					1	6	5	15	7	10	1	9	5	21	6	16		15	2	14	27	106
430-439						10	1	9	5	10	3	4	6	10	6	12	4	12	1	6	26	73
440-449					2	4	1	10	4	13		2	1	11		10	3	9	2	13	13	72
450-459					2	1	2	6	2	7	3	5	1	3		5		12	3	7	13	66
460-469								3	1	7		4		8		5	2	7		3	3	37
470-479								3		4				1		3		2		3		16
480-489						1		1		2			1	3	1	3		3		1	2	14
490-499						2		1		2						1				1		7
500-509								4		2				1		1		1		1		10
510-519								1		2										2		5
520-529								2														2
530-539								1														1
540-549															1	1				1	1	2
550-559								1		1												2
560-569										1												1
570-579																				1		1
580-589																						
590-599															1						1	
760-769									1												1	
Total	ND		ND		146	94	133	109	110	105	162	117	95	154	95	144	68	173	95	174	953	1150

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.9. Length-frequency distribution for measured sample of inconnu by sampling cycle and side of trap at Station 501, Wood Bay, 1989.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-24																								
25-49									2															
50-74					2	1	18	11	36	23	5	5	1	1				2					62	43
75-99	1	1							1	7	13	5	22	4	2		1		1				41	18
100-124	4	4	2	3		1					2		6	4	11	1	1	6	9	8			35	31
125-149	2	2	3	3	4	2									1	5	1		2	7			13	14
150-174	1				2	2	1						1		1								6	2
175-199		1									2			2									2	3
200-224															2		1	1					3	1
225-249		3	1						1	1													2	4
250-274		1		1				1		1														4
275-299									1										1				1	1
300-324	1														1				3				5	
325-349																			1	1			1	1
350-374								1												3				3
375-399																1								2
400-424								3									1	2	3				2	7
425-449							1	5		3		1				1				8			1	18
450-474							1	8		2							2	2	12				3	24
475-499								3		2		1	1	1	1	2		5	12				7	21
500-524	1						1	3	1	4					1		1	1	5				4	14
525-549								1		2	1	1				1				3			2	7
550-574						1		3									1							
575-599							1	2		2					1	1				1			2	7
600-624						1		2	1	1					1				1	7			2	12
625-649					1			2							1		1		1				1	5
650-674					1	1													1	2			2	1
675-699	1								1											2			2	2
700-724																				1			1	
725-749							1												1	1			2	1
750-774		1				1										1			1	1			1	3
775-799								1											1				1	1
800-824								1								2			2				2	1
825-849																1			2					
850-874																								
875-899								1							1								2	
900-924								2																
925-949																			1				1	2
950-974								2		1													2	
975-999																			1				1	
1000-1024																								
1025-1049								2											1				1	3
1050-1074							1												1				1	
1075-1099													1										1	1
1100-1124													1										1	1
1125-1149				1												1		2					3	
1150-1174								1																1
1175-1199										1														1
																								1
Total	11	13	6	8	10	10	25	53	44	50	23	13	31	12	20	17	10	16	36	81			216	273

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A5.10. Length-frequency distribution for measured sample of inconnu by sampling cycle and side of trap at Station 502, Wood Bay, 1989.[1]

Fork Length (mm)	Number by Sampling Cycle and Side of Trap[1]																						Total	
	1		2		3		4		5		6		7		8		9		10					
	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02	01	02			01	02
0-24																								
25-49					3																			
50-74					5	3	5	6	10	11	7	3	1	1									3	
75-99									1	3	1				1	1		2					28	26
100-124															4	3			1	3			4	6
125-149					1										1		1	1	1				5	4
150-174					5		1		1		2	2				1			1				3	2
175-199					1					4	2	1			1	2							9	3
200-224															2				1	1			5	7
225-249					1			2								1			3	1			5	1
250-274								2								1				2			1	5
275-299							2	2			3					1							5	3
300-324							1							1		5		2					1	8
325-349							1	2		1													1	3
350-374							1	3		3		1											1	3
375-399							1			3					1	1		1					1	7
400-424								1		3		1											2	5
425-449					3	5	2	7	1	1														5
450-474						4	2	7	1	12		3		2		2	2	2		1			6	13
475-499					1	5		5	3	12	3	3	1			2		2		6			5	33
500-524						4	1	5	1	8		5	1	1		8	1	4	1	8			8	35
525-549						2		3	1	7	3	3	1	4		6	1	6		6			5	43
550-574						1				3		1		1		8	1	5	2	6			6	37
575-599							1	5		1		1		2		3	1	3		1			3	24
600-624						1		3				1				2	1	2	1	2			2	15
625-649								3								1		2	1				2	11
650-674								1					1	1		2			1	2			1	7
675-699								3					1							1			2	6
700-724						1		1			1					1		2		1			1	4
725-749									1								1			3			2	6
750-774							1	1	1	1				1		1		2	1	2			2	4
775-799							1			2						1			1	1			1	6
800-824																2				1			3	4
825-849					1	1										2							1	5
850-874																		2	2	1			2	2
875-899																		1		1			3	4
900-924							1													1				2
925-949									3				1	2		3	1			1			1	1
950-974									1											2			2	0
975-999									2							1								3
1000-1024									1				1										1	3
1025-1049								2							1				1				2	1
1050-1074														1					2				3	2
1075-1099								1								1				1				2
1100-1124								1		1									1				1	3
1125-1149										2				1		1			1				1	2
1150-1174										1						1								5
1175-1199															1	1							1	2
																1								1
																								1
Total	ND		ND		16	23	21	48	22	105	24	28	8	18	12	64	10	30	25	56			138	381

[1] Side 01 refers to the Anderson River side of the lead.

Appendix A6.1. Length-frequency distribution for measured sample of Arctic flounder by sampling cycle at Station 501, Wood Bay, 1989.

Total Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39								1		2	3
40 - 49		2	3	3				3	3	4	18
50 - 59	3	13	31	33	11	3			1	6	101
60 - 69		6	16	27	41	17	9				116
70 - 79		8	12	3	10	12	34	2			81
80 - 89	2	41	32	3	2	4	12	1	6	2	105
90 - 99	2	26	18	2	6	4	4	1	3	2	68
100 - 109	2	8	10		3	18	7		1	2	51
110 - 119	1	6	6		1	11	9	1	3		38
120 - 129		4	2	1		8	5		4	6	30
130 - 139	3	3	1		2	3	2			1	15
140 - 149	4	7	8			4	2		2	2	29
150 - 159	2	7	6	2	2	6	4		1	1	31
160 - 169	2	5	7			7	5		2	4	32
170 - 179	5	6	5		1	11	6		5	1	40
180 - 189	3	4			1	5	1	2	3	8	27
190 - 199	2	2	2		1	5	9	1	4	7	33
200 - 209	1	1	2	1	1	1	3		5	4	19
210 - 219	1	3	2			2	4		3	3	18
220 - 229		2				2	6		5	11	26
230 - 239	6		5		2	4	8	2	9	12	48
240 - 249			2			6	8		22	9	47
250 - 259		1	2		1	5	6		19	14	48
260 - 269	1	1	2		2	1	9		16	12	44
270 - 279		2	2			4	6	1	10	8	33
280 - 289	1		3		1	3		1	11	11	31
290 - 299						1			3	12	16
300 - 309			1			1	2		2	3	9
310 - 319						1			1	2	4
320 - 329									1		1
330 - 339										1	1
340 - 349											
350 - 359											
360 - 369											
370 - 379											
380 - 389											
390 - 399											
450 - 459									1		1
Total	41	158	180	75	88	149	161	16	146	150	1164

Appendix A6.2. Length-frequency distribution for measured sample of Arctic flounder by sampling cycle at Station 502, Wood Bay, 1989.

Total Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49				1					1	1	3
50 - 59			2	10							12
60 - 69			1	12	4	1		1			19
70 - 79			1	5	2			6		2	16
80 - 89			5	4	6	1	1	34	4	9	64
90 - 99			7	13	15	5	2	10	8	7	67
100 - 109			5	7	13	16	6	16	4	5	72
110 - 119			1	3	11	11	2	7	2	5	42
120 - 129			4	2	2	1	4	3	6	8	30
130 - 139			3		3	4	1	1	1	4	17
140 - 149			1	2	4	4	1	1	5		18
150 - 159			1	5	8	4	1	3	1	1	24
160 - 169			2		1	8	2	3	5		21
170 - 179			3	1	3	3	5		3	5	23
180 - 189			1	5	2	7	2	3	6	2	28
190 - 199			3	1	1	3	1	2	4	3	18
200 - 209			1	2		2	1		3	3	12
210 - 219			3	1	3	3		1	4	1	16
220 - 229			5		1	3		4	3	1	17
230 - 239			6	4	1	2	3	7	1		24
240 - 249			4	2	1	2	1	4	4	5	23
250 - 259			5	1	2	3	1	7	7	1	27
260 - 269			5	2	1	4	3	4	5		24
270 - 279			3	2	1		3	4	4	1	18
280 - 289			3	1	1	2		2	4	1	14
290 - 299			2	1	1	1	2	2	2		11
300 - 309				1		1					2
310 - 319									1		1
320 - 329			1								1
330 - 339											
340 - 349											
350 - 359											
360 - 369						1					1
370 - 379											
380 - 389											
390 - 399											
Total	ND	ND	78	88	87	92	42	125	88	65	665

Appendix A6.3. Length-frequency distribution for measured sample of rainbow smelt by sampling cycle at Station 501, Wood Bay, 1989.

Fork Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39	1										1
40 - 49	3				1						4
50 - 59	31	2	3	1	2	1		3		1	44
60 - 69	9	3	6	6	11	17	8	3	1	1	65
70 - 79	21	19	12	11	25	44	51	27	6	15	231
80 - 89	77	56	16	27	16	22	37	14	13	20	298
90 - 99	90	33	7	20	13	11	21	2	14	12	223
100 - 109	53	22	7	11	2	6	19	3	7	3	133
110 - 119	23	4	3	3	1		7	3	9	4	57
120 - 129	10	4	3			2	2		2	4	27
130 - 139	4	6	3	3					4		20
140 - 149	11	14	11						1		37
150 - 159	19	18	19							3	59
160 - 169	22	16	11	2				1		1	53
170 - 179	26	13	7	1	2						49
180 - 189	32	13	1	1							47
190 - 199	10	6		1	1						18
200 - 209	7	3	1	2	1						14
210 - 219	3		1		1						5
220 - 229	2	1									3
230 - 239	1										1
240 - 249											
250 - 259	3										3
260 - 269	1										1
270 - 279	1										1
280 - 289											
290 - 299											
Total	460	233	111	89	76	103	145	56	57	64	1394

Appendix A6.4. Length-frequency distribution for measured sample of rainbow smelt by sampling cycle at Station 502, Wood Bay, 1989.

Fork Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39			1		1						2
40 - 49			1		1						2
50 - 59			19	1	5					1	26
60 - 69			21	11	21	3	5	9	2	8	80
70 - 79			21	22	43	37	36	60	18	13	250
80 - 89			28	33	23	20	21	43	40	28	236
90 - 99			14	10	16	17	8	6	19	9	99
100 - 109			3	5	7	12	6	14	8	6	61
110 - 119			1	1		3	6	8	15	11	45
120 - 129			2		3		6	4	13	7	35
130 - 139				1				6	11	1	19
140 - 149			2				2	3	6	4	17
150 - 159			2	1	1		1	3	3	2	13
160 - 169			1	2				1	4	2	10
170 - 179			1	4				1	1	3	10
180 - 189			5	1					1	3	10
190 - 199			3	2	1	1		1	1	1	10
200 - 209			1	2					1		4
210 - 219				1				1		1	3
220 - 229								1		1	2
230 - 239								2	1		3
240 - 249								1			1
250 - 259				1				1			2
260 - 269				1				1			2
270 - 279								2			2
280 - 289										1	1
290 - 299											
Total	ND	ND	126	99	122	93	91	168	144	102	945

Appendix A6.5. Length-frequency distribution for measured sample of fourhorn sculpin by sampling cycle at Station 501, Wood Bay, 1989.

Total Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39							1				1
40 - 49											
50 - 59								1			1
60 - 69		1	1			2				3	7
70 - 79	1	4	7	2		3	1	2		1	21
80 - 89		5	11		1	4				1	22
90 - 99	1	3	6	1		4	3	3	1	4	26
100 - 109		1	2		1	4	3	1	1	12	25
110 - 119						1			1	2	4
120 - 129			1				1		1		3
130 - 139		2	1	1	1	1				1	7
140 - 149		1			1	5	2	2	3	2	16
150 - 159		2			1	2		1		2	8
160 - 169		1				1		1	2	1	6
170 - 179								1	3		4
180 - 189			2	1		2	1		2		8
190 - 199							2		2	1	5
200 - 209			2				1		1	1	5
210 - 219								1	1		2
220 - 229								1	1		2
230 - 239									1		1
240 - 249									2		2
250 - 259							1	2	5	2	10
260 - 269			1					2	2	1	6
270 - 279						2		2	2	1	7
280 - 289								1	2	1	4
290 - 299								1	2	2	5
300 - 309					1				2		3
310 - 319								3	2	1	6
320 - 329		1							1		2
330 - 339								2	2		4
340 - 349											
350 - 359								1			1
360 - 369											
370 - 379											
380 - 389											
390 - 399											
Total	2	21	34	5	6	31	16	28	42	39	224

Appendix A6.6. Length-frequency distribution for measured sample of fourhorn sculpin by sampling cycle at Station 502, Wood Bay, 1989.

Total Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49											
50 - 59											
60 - 69			7						2	4	13
70 - 79			9	2	4	2	1	2		1	21
80 - 89			3	8	7	25	12	11	2	3	71
90 - 99			5	6	20	37	17	26	21	9	141
100 - 109				3	11	10	14	13	23	16	90
110 - 119			2	2	14	11	5	5	4	10	53
120 - 129			3	10	13	10	16	8	10	11	81
130 - 139			7	9	22	16	12	14	13	22	115
140 - 149			1	6	16	4	5	11	14	17	74
150 - 159			2	6	3	3	7	5	8	5	39
160 - 169			1	6	13	5	4	7	5	8	49
170 - 179			6	4	4	1	9	7	10	7	48
180 - 189			2	5	8	4	8	7	6	10	50
190 - 199			4	2	4	2		1	6	10	29
200 - 209			2	7	5		2	4	3	5	28
210 - 219			1	4		1	1			3	10
220 - 229			2	1	3	1		1			8
230 - 239			6	2	3	1		2	2	3	19
240 - 249			4		1	1	1	2	3	1	13
250 - 259			5				1	2		1	9
260 - 269				3				1		1	5
270 - 279			4		2					2	8
280 - 289			3	2	2			2	1		10
290 - 299			3					1	2		6
300 - 309			2		1	1		1		1	6
310 - 319			3		1						4
320 - 329			2	1							3
330 - 339											
340 - 349			1								1
350 - 359											
360 - 369											
370 - 379					1						1
380 - 389											
390 - 399											
Total	ND	ND	90	89	158	135	115	133	135	150	1005

Appendix A6.7. Length-frequency distribution for measured sample of Pacific herring by sampling cycle at Station 501, Wood Bay, 1989.

Fork Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49								3		1	4
50 - 59								10	6	14	30
60 - 69			2	3					2	14	21
70 - 79			31	34	21	19	2		2	1	110
80 - 89			12	43	24	36	4	4	4	2	129
90 - 99				7	15	17	3	3	2		47
100 - 109			6	1	3	4			14	2	30
110 - 119			14	7	15	5			10	1	52
120 - 129		1	13	7	10	6			2		39
130 - 139			2		4	2			3		11
140 - 149			1		3	1			7	2	14
150 - 159									1	1	2
160 - 169											
170 - 179			1		1						2
180 - 189											
190 - 199											
Total	0	1	82	102	96	90	9	20	53	38	491

Appendix A6.8. Length-frequency distribution for measured sample of Pacific herring by sampling cycle at Station 502, Wood Bay, 1989.

Fork Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49											
50 - 59					1			7	2	1	10
60 - 69			9	9	1			51	16	14	82
70 - 79			20	41	23	9	2	5	3	32	59
80 - 89			13	50	36	46	4	1	1	5	102
90 - 99			5	9	13	53	3	10	5	1	165
100 - 109				4	2	8	4	9	3	2	97
110 - 119			5	12	8	4	1	5	5	6	34
120 - 129			1	15	2	9			1	5	36
130 - 139			3		4	5				2	29
140 - 149					1		1		2		12
150 - 159								1	1		4
160 - 169											2
170 - 179											
180 - 189				1							
190 - 199											1
Total	ND	ND	56	141	91	134	15	89	39	68	633

Appendix A6.9. Length-frequency distribution for measured sample of saffron cod by sampling cycle at Station 502, Wood Bay, 1989.

Total Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49											
50 - 59										2	2
60 - 69											
70 - 79			8		2						10
80 - 89			4								4
90 - 99			3			2	1				6
100 - 109			2	1	2						5
110 - 119			3	1	5	6	1		1		17
120 - 129				1	5	4	7	7	3	1	28
130 - 139				1	3	2	11	3	19	2	41
140 - 149					1		8	3	30	10	52
150 - 159								4	22	18	44
160 - 169									10	22	32
170 - 179			2						1	16	19
180 - 189										6	6
190 - 199			1							1	2
200 - 209										1	1
210 - 219			1							1	2
220 - 229			1					1		2	4
230 - 239										3	3
240 - 249										2	2
250 - 259			1					1		1	3
260 - 269											
270 - 279										1	1
280 - 289				1							1
290 - 299			1							3	4
300 - 309			2					1		2	5
310 - 319			3					1		1	5
320 - 329			7	2				1		1	11
330 - 339			7					1		4	12
340 - 349			18	1				1		2	22
350 - 359			18					2		3	23
360 - 369			18	3				1		1	23
370 - 379			7					2			9
380 - 389			19								19
390 - 399			10	2				1			13
400 - 409			22			1	1			1	25
410 - 419			25			1				1	27
420 - 429			13	2	1			2			18
430 - 439			8	1							9
440 - 449			8					1	1		10
450 - 459			1								1
460 - 469			1	1							2
470 - 479			2								2
480 - 489			2	1							3
490 - 499			2								2
500 - 509											
510 - 519			1								1
Total	ND	ND	221	18	19	16	29	33	87	108	531

Appendix A6.10. Length-frequency distribution for measured sample of longnose sucker by sampling cycle at Station 501, Wood Bay, 1989.

Fork Length (mm)	Number by Sampling Cycle										Total
	1	2	3	4	5	6	7	8	9	10	
0 - 9											
10 - 19											
20 - 29											
30 - 39											
40 - 49											
50 - 59		1									1
60 - 69	1	5									6
70 - 79	2	8	1	3				1			15
80 - 89	3	17	3	4			9		1		37
90 - 99	5	19	8	14	2	2	11		3		64
100 - 109	9	15	7	8	3	1	29	3	4	2	81
110 - 119	5	17	8	6	5	3	26	4	1		75
120 - 129	9	12	9	7	3		18	2	6	2	68
130 - 139	7	10	6	1		1	13	2	4	3	47
140 - 149	9	8	9	1		2	10	1	2	1	43
150 - 159	9	6	2		1		7	2	2	3	32
160 - 169	11	3	7		1		2	4			28
170 - 179	5	4	4						3	3	19
180 - 189	7	5	2	1		1	2			1	19
190 - 199	5		1		1		1			1	9
200 - 209	4						3	2			9
210 - 219	2		2		1		3			1	9
220 - 229	1		2			1	2			1	7
230 - 239	1	1					1		1		4
240 - 249	2		1				1	2	2	2	10
250 - 259	1	1									2
260 - 269							1				1
270 - 279	2						1				3
280 - 289			2		1			1			4
290 - 299		1									1
300 - 309											
310 - 319		1					1				2
320 - 329											
330 - 339			1				1				2
340 - 349						1					1
350 - 359	1			1							2
360 - 369		2				1		1			4
370 - 379						1		1		1	3
380 - 389	1	1					1			2	5
390 - 399						2	2			1	5
400 - 409	1										1
410 - 419	2	2		2	1		1		1		9
420 - 429	2	1		3	4	4	1				15
430 - 439	6	2	1	1	1	1	1				13
440 - 449	7	1	3	1	4	2	3			1	22
450 - 459	8	3	8	6		4	1	1	1		32
460 - 469	17	6	1	2	8	2	8	1		2	47
470 - 479	11	2	4	1	2	3	2				25
480 - 489	8	9	1	3			1	3		2	27
490 - 499	13	1	4	2	3	5	7	2		2	39
500 - 509	15	3	2	4	3	2	8		1	1	39
510 - 519	7	3	3				3	1			17
520 - 529	2			1		1					4
530 - 539	1			1							2
550 - 559					1						1
590 - 599	1										1
Total	203	170	102	73	45	40	181	34	32	32	912

Appendix A7. Length-frequency distributions for minor species captured in the trap nets at Wood Bay, 1989.[1]

Length (mm)	STFL[2] N	STFL[2] %	BLPB[2] N	BLPB[2] %	NRPK[3] N	NRPK[3] %	BRBT[2] N	BRBT[2] %	NSSB[2] N	NSSB[2] %	ARCD[2] N	ARCD[2] %	ARGR[3] N	ARGR[3] %	CHAR[3] N	CHAR[3] %	LAMP[2] N	LAMP[2] %	RDWT[3] N	RDWT[3] %	CPLN[3] N	CPLN[3] %	LKCB[3] N	LKCB[3] %
0-9																								
10-19																								
20-29																								
30-39	1	0.8																						
40-49	3	2.4							1	6.3														
50-59	1	0.8							5	31.3														
60-69	1	0.8							9	56.3			2	18.2										
70-79	7	5.7							1	6.3	1	6.3											1	100.0
80-89	3	2.4									4	25.0												
90-99	3	2.4									4	25.0	2	18.2										
100-109	11	8.9	2	1.9							1	6.3	1	9.1										
110-119	6	4.9									1	6.3												
120-129	13	10.6	1	0.9			1	2.2			2	12.5	2	18.2										
130-139	1	0.8	5	4.6			1	2.2																
140-149	1	0.8	5	4.6	1	1.5					1	6.3							1	100.0	1	100.0		
150-159			13	12.0	1	1.5					1	6.3	1	9.1										
160-169			10	9.3	7	10.3	1	2.2			1	6.3												
170-179	1	0.8	14	13.0	2	2.9																		
180-189			7	6.5	3	4.4																		
190-199			6	5.6	2	2.9											1	50.0						
200-209	2	1.6	10	9.3	2	2.9	2	4.4																
210-219	2	1.6	5	4.6			1	2.2																
220-229	4	3.3	8	7.4			1	2.2																
230-239	6	4.9	6	5.6			3	6.6																
240-249	8	6.5	7	6.5			3	6.6							1	11.1								
250-259	9	7.3	4	3.7			1	2.2									1	50.0						
260-269	7	5.7	1	0.9	1	1.5																		
270-279	11	8.9	2	1.9	1	1.5	3	6.6																
280-289	6	4.9																						
290-299	6	4.9					1	2.2																
300-309	2	1.6					2	4.4																
310-319	1	0.8	2	1.9																				
320-329	2	1.6																						
330-339	1	0.8											1	9.1										
340-349					1	1.5																		
350-359	1	0.8													1	11.1								
360-369													1	9.1										
370-379																								
380-389																								
390-399													1	9.1										
400-419	2	1.6			1	1.5									3	33.3								
420-439															2	22.2								
440-459					1	1.5	1	2.2																
460-479																								
480-499	1	0.8			2	2.9																		
500-519					3	4.4																		
520-539					2	2.9									1	11.1								
540-559					6	8.8																		
560-579					6	8.8	2	4.4																
580-599					4	5.9	4	8.8																
600-619							2	4.4							1	11.1								
620-639					2	2.9	1	2.2																
640-659					6	8.8	1	2.2																
660-679					3	4.4	1	2.2																
680-699					2	2.9	3	6.6																
700-719					1	1.5	1	2.2																
720-739					3	4.4	1	2.2																
740-759					3	4.4	1	2.2																
760-779					1	1.5	1	2.2																
780-799																								
800-819							1	2.2																
820-839					1	1.5																		
840-859																								
860-879							1	2.2																
880-899																								
900-919							2	4.4																
920-939							1	2.2																
940-959																								
960-979							1	2.2																
980-999																								
Total	123		108		68		45		16		16		11		9		2		1		1		1	

[1] Note: Length intervals are 10 mm up to a length of 399 mm and 20 mm for fish 400 mm and longer
[2] Total Length
[3] Fork Length